OKIFAX4550/
OKIOFFICE87

Maintenance Manual

2001-12-18 Rev.7

Oki Data Corporation

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PREFACE

This manual is intended to be used for installing and maintaining OKIFAX4550/OKIOFFICE87 facsimile transceiver.

Maintenance of the OKIFAX4550/OKIOFFICE87 is assumed to be conducted at the following levels:

- Assembly-level maintenance for mechanical portions
- Unit-level maintenance for electrical at portions

CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS
and
ATTENTION: IL Y A DANGER D'EXPLOSION S'IL Y A REMPLACEMENT INCORRECT DE LA BATTERIE. REMPLACER UNIQUEMENT AVEC UNE BATTERIE DU MEME TYPE OU D'UNT TYPE RECOMMANDE PAR LE CONSTRUCTEUR. METTRE AU REBUT LES BATTERIES USA GEES CONFORMEMENT AUX INSTRUCTIONS DU FABRICANT.

Programming procedures of the following user's functions are not described in this maintenance manual.
Please refer to user's guide.

- One-touch key programming
- Two-digit auto dial programming
- Group setting
- Programming mail box password
- Memory operation

ODA/OEL, INT'L MODEL NAME

- OKIFAX4550
- OKIOFFICE87

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1. GENERAL INFORMATION

1.1 General Performance

(1) Type of appearance
- Desktop type

(2) Applicable lines
- Public switched telephone network (PSTN)
- Private branch exchange (PBX)
- ISDN (Integred service digital network)
- Fax2Net Internet Fax (via PSTN)

Note: ISDN and Internet Fax are option

(3) Compatibility
- ITU-T Group 3 facsimile transceiver
- ITU-T Group 4 facsimile transceiver (option)

(4) Document width
- Max. 216 mm (NA Letter)
- Min. 148 mm (ISO A5 size)

(5) Effective reading width

TX
- Max. 215 mm (NA Letter)
- Max. 208 mm (ISO A4 size)

COPY
- 203.2 mm (NA Letter)
- 203.2 mm (ISO A4 size)

(6) Scanning length
- 128 mm to 356 mm

(Length setting: Unlimited (1500mm) is also available.)

(7) Automatic document feeder (ADF)
- 20 sheets (NA Letter/A4-size: 20-1b bond/75 gm. Oki Data recommended paper)
- 15 sheets (NA Letter/A4-size: 16 to 28-1b bond/60-105 gm)

Note: NA is North America

(8) Recording paper or sheet

• 1st tray:	NA Letter/NA Legal/A4-size plain paper cut 100 sheets capacity (20-1b bond*)
• Manual paper feeder:	Transparency for overhead projector, applicable. Sheet size: NA Letter/NA Legal/A4-size

*: Oki Data recommended paper

(9) Printable width
- NA Letter: 203.2 mm (203.2 mm for assured quality)
- NA Legal: 203.2 mm (203.2 mm for assured quality)
- ISO A4: 203.2 mm (197.3 mm for assured quality)

(10) Printable length
- NA Letter: 273.4 mm (266.7 mm for assured quality)
- NA Legal: 349.6 mm (342.9 mm for assured quality)
- ISO A4: 291.0 mm (284.3 mm for assured quality)

(11) Copy stacker
- Max. 30 sheets (Faceup stacking)

*: Oki Data recommended paper

(12) Scanning resolution

a) Horizontal:

• 300 dot/inch

Note 1: In the local COPY mode at standard (STD) resolutions, the dpi conversion is done from 300 dot/inch to 200 dot/inch.

2: 600 dpi × 15.4 line/mm: Copy is available for OKIOFFICE87.

b) Vertical:

Transmission mode: 3.85 line/mm (STD), 7.7 line/mm (FINE), 15.4 line/mm (EX.FINE) or 300 dot/inch (EX.FINE)

COPY mode: 3.85 line/mm (STD), 7.7 line/mm (FINE) or 15.4 line/mm (EX.FINE)

Note: 300 dpi × 300 dpi: Transmission is available.

(13) Scanning method

• 2592 bits contact image sensor

(14) Recording resolution

a) Horizontal:

• 300 dot/inch

• 600 dot/inch for OKIOFFICE87

b) Vertical:

Variable: Automatically adjusted to the paper length.
(784 to 1076 dot/inch), (300 to 395 dot/inch), STD mode (3.85 to 5.06 line/mm) and FINE mode (7.7 to 10.13 line/mm) and EX-FINE mode (15.4 to 20.24 line/mm)

Fixed:

STD mode:	3.85 line/mm
FINE mode:	7.7 line/mm
EX-FINE mode:	15.4 line/mm
	300 dot/inch

(15) Recording method

• 211.3 mm (2496 bits) and/or 216.7 mm (2560 bits) LED print head

(16) Minimum scan line time for reception

• When receiving from OKIFAX or ECM:	0 ms
• When receiving from non- OKIFAX and non ECM:	10 ms at 3.85 line/mm
	5 ms at 7.7 line/mm, 15.4 line/mm

(17) Print speed

• Max. 8 sheets per minute (at NA letter size)

(18) Pre-heating time

• Approx. 30 sec. (Standby to Print)

Note: This feature is not available OKIFAX4550/OKIOFFICE87 for ODA version.

(19) Coding scheme

• Modified Huffman (MH)

• Modified READ (MR)

• Modified Modified READ (MMR)

(20) Modem

- ITU-T Rec. V.29: 9600 bps for use on point-to-point 4-wire leased telephone type curcuits.
- ITU-T Rec. V.27 ter: 4800 bps modem for use in PSTN (Public Switched Telephone Network)
- ITU-T Rec. V.21 channel 2: 300 bps duplex modem for PSTN
- ITU-T Rec. V.17: 2-wire modem for fax applications up to 14.4 kbps
- ITU-T Rec. V.34: A modem operating at data signalling rates of up to 33.6 Kbps for use on the general switched telephone network and on leased point-to-point 2-wire telephone-type circuits.
- ITU-T Rec. V.33: 14400 bps for use on point-to-point 4-wire leased telephone type circuits.

(21) Transmission speed

- 3 sec. (approx 3.2 sec) per sheet of ITU-T No. 1 evalution test chart

Note: This is Phase C time at 3.85 line/mm and 33600 bps for 3 sec. in MMR code transmission.

(22) Protocol

- ITU-T Rec. T.30
- ITU-T Rec. G4 class 1 (option)
- OKI special protocols: High-speed protocol (G3)

(23) Error correction scheme

- ITU-T ECM

(24) Communication mode

- Half duplex

(25) Image memory

- Basic model: 2M byte

(26) Liquid crystal display (LCD)

- Two rows of 20 characters for operation guidance, check and various kinds of information

(27) Power source

- Nominal input voltage 120 VAC for ODA version
- Nominal input voltage 230 VAC for INT'L version

(28) MFP (Multi- Function Peripheral) functions:

PC Printer Function
PC Scanner Function
PC Fax Modem Function
Location Programing Function

Note: For details, see "Product Specification for MFP"
This function is standard for OKIOFFICE87.

(29) FAX2NET functions:

- FAX over IP Function
- FAX to E-mail Function
- Virtual E-mail Function
- Broadcast function
- Web Retrieval Function
- Prepaid Card Registration (Note 2)

Note 1: For details, see Appendix I "FAX2NET Function".
2: May not used according to dealer's conditions.

1.2 General User's Functions

(1) Transmit mode
- Automatic transmit mode
- Manual transmit mode

(2) Receive mode
- Automatic receive mode
- Manual receive mode
- TEL/FAX automatic switchover mode
- TAD mode
- Memory only receive mode
- Forwarding mode
- PC receive mode (This function is the standard for OKIOFFICE87)

(3) Instant dial

(4) Advanced T.30 protocol

(5) Dual access

(6) Automatic redial

(7) Last number redial (Manual redial)

(8) Local copy of a document, including multiple copies
- 50 copies max.

(9) Sender identification (Sender ID)

(10) Personal identification (Personal ID)

(11) Polling transmission
- Feeder Polling transmission
- Memory Polling transmission

(12) Polling reception

(13) Bulletin polling

(14) Acoustic line monitor

(15) Automatic alternate selecting call (FAX No. + FAX No. can be registered in one-touch keys).

(16) Delayed transmission (Max. 3 days)
- Delayed broadcast
- Delayed transmission
  5 specified times

(17) Relay broadcast initiate

(18) Confidential message transmission

(19) Confidential message reception
8 mail boxes

(20) PHOTO mode (at FINE resolution)
64 scale gradations

(21) G3 sequential broadcast (Memory)
- Broadcast mode
  90 stations at maximum for OKIFAX4550
  120 stations at maximum for OKIOFFICE87
- Delayed broadcast mode

(22) No paper/no toner reception

(23) Memory-only reception
(Memory reception even if paper does not run out)

(24) Distinguishing text from picture

(25) Page re-transmission (Only in case of memory TX mode)

(26) Vertical reduction printing (Reduction rate is from 100% to 75%)

(27) Horizontal reduction (RX, copy : Reduction rate is from 93% to 98%)

(28) Smoothing printing (In case of 8 dots/mm $\times$ 3.85, 7.7 or 15.4 lines/mm $\rightarrow$ 300 dot/inch $\times$ 784 line/inch)
- Turns off in the PC print mode.

(29) Programmed key operation (“F” key + “OT” key)

(30) Auto dialing

• One-touch dialing	10 locations
• Two-digit automatic dialing	70/100 locations for OKIFAX4550/OKIOFFICE87
• Keypad dialing	
• Chain dialing	
• Mixed dialing	
• Group dialing	5 groups

(31) Real-time dialing
Dialing with telephone off the hook or when the Hook key is pressed.

(32) Automatic pause signal insertion

(33) Manual feeder local copy

(34) Telephone directory (Alpha search) dialing

(35) TEL/FAX automatic switching

(36) Time and date printing

(37) Closed users group (Direct mail rejection)

(38) Transmission contrast and resolution control

(39) Key touch tone

(40) Printer counter display (For drum, toner, total print)

(41) Total page counter (Scan)

(42) Quick scanning 6 sec. minimum $\rightarrow$ A4 size 3.85R/mm

(43) Time and date setting

(44) PC interface
- Standard: OKIOFFICE87
- Option: OKIFAX4550

Note: Hardware is mounted.

(45) Language selection
- 2 languages (LCD and Reports)

(46) Reports
- Activity report
- Active memory files report
- Protocol report
- Message confirmation report (Single address and multiple addresses)
- Broadcast entry report (Broadcast)
- Broadcast confirmation report
- Transmission error report
- Confidential reception report
- Configuration report
- Telephone directory
- Power outage report
- Log.report (service bit=ON)
- G4 Log.report (service bit=ON)

(47) Restricted access

(48) Continuous alarm tone

1.3 General Maintenance Functions

1) Local tests
   (1) Self-diagnosis
   - CPU ROM/RAM check
   - FLASH memory check (Program, Language, Default)
   - RAM check
   - Print test

   (2) Sensor calibration (Adjustment of scanning level)

   (3) LEDs test

   (4) Tone send test (When NCU board is installed.)

   (5) Multi-frequency (MF) send test (When NCU board is installed.)

   (6) High-speed modem send test (When NCU board is installed.)

   (7) High-speed modem receive test (When NCU board is installed.)

   (8) Tone (TEL/FAX) test (When NCU board is installed.)

   (9) Loop back 1 (When G4 option board is installed.)

   (10) Loop back 2 (When G4 option board is installed.)

   (11) INFO 0 sending (When G4 option board is installed.)

   (12) INFO 1 sending (When G4 option board is installed.)

   (13) INFO 3 sending (When G4 option board is installed.)

   (14) Pulse (1KHz) send (When G4 option board is installed.)

   (15) Pulse (2KHz) send (When G4 option board is installed.)

   (16) Pulse (N2KHz) send (When G4 option board is installed.)

2) Technical function

3) System reset
   - All data clear
   - Location data clear
   - Configuration data clear

4) Default type set

5) PC loading

6) G4 PC loading

1.4 General Appearance

Figure 1.1 shows the general appearance of the OKIFAX4550/OKIOFFICE87.
Figure 1.2 shows the control panel of the OKIFAX 4550.

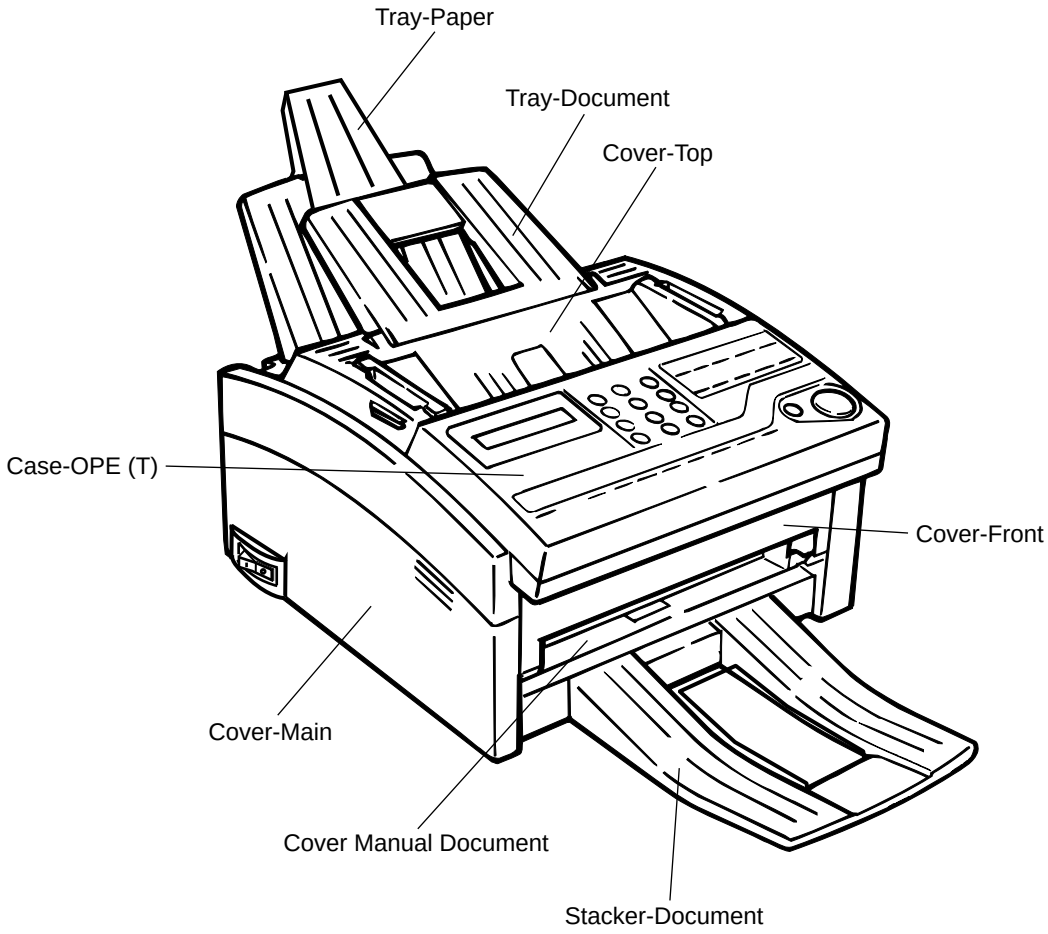


Figure 1.1 General Appearance of OKIFAX4550/OKIOFFICE87

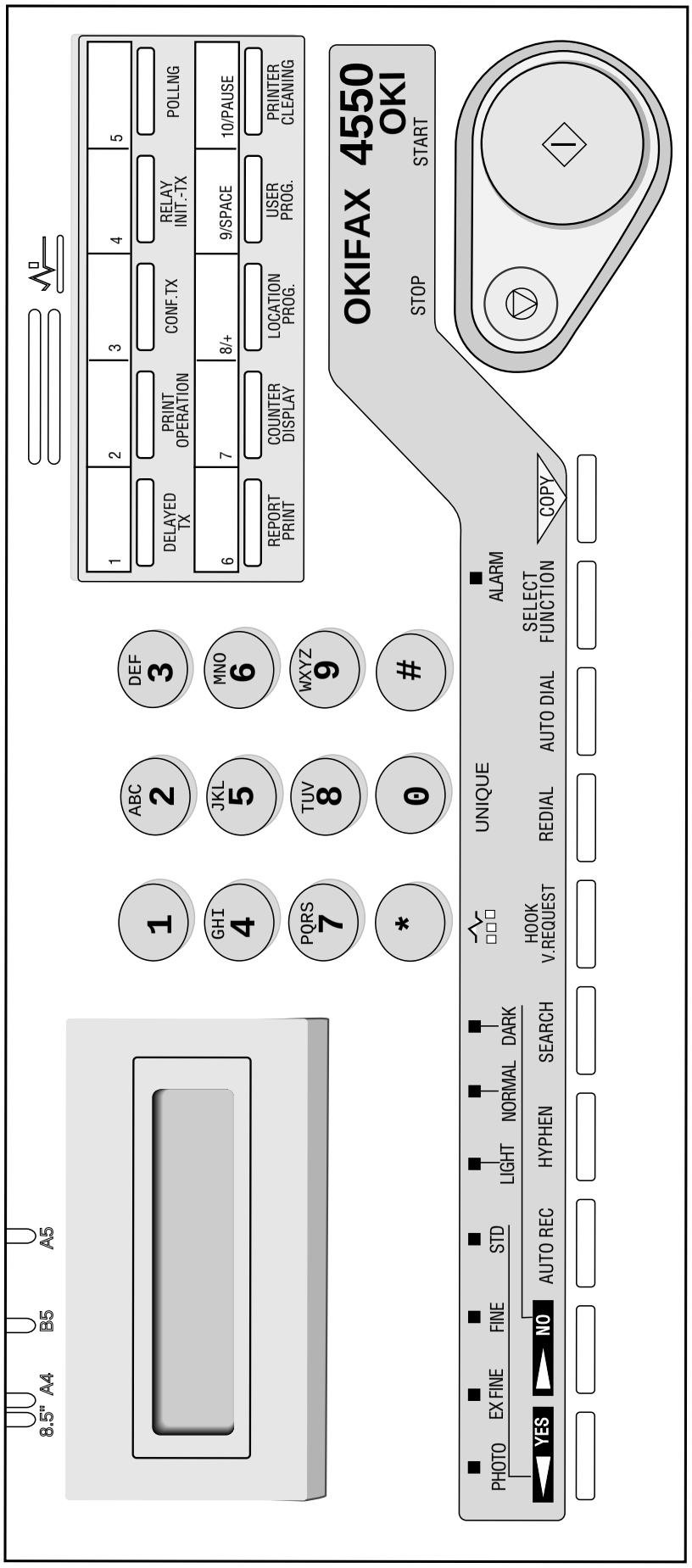


Figure 1.2 Control Panel of OKIFAX 4550

1.5 Basic Performance Specifications

Table 1.1 shows basic performance specifications.

Note: TF: Technical function setting
FP: Function program setting
OT: One-touch key pressed
F: SELECT FUNCTION key pressed

Table 1.1 (1/11) Basic Performance Specifications

No.	Item	Specifications
1	Applicable line	1) Public switched telephone network (PSTN) 2) Private branch exchange (PBX) (OT9+2)
2	Line interface 1) Impedance	600Ω balanced ***Note:*** Impedance may differ by the requirement of PTT.
	2) Sending power level	0 dBm to –15 dBm range (Adjustable in 1 dB steps. TF + 21)
	3) Receiving power level	0 dBm to –40 dBm or -6 dBm to -43 dBm: for V.17, V29 and V.27 ter. (In case of V.34 TX/RX, -3dBm to -36dBm)
3	Type of document to be transmitted 1) Width	Max. 216 mm (NA Letter) Min. 148 mm (ISO A5 size) ***Note:*** Effective reading width is NA Letter (215 mm).
	2) Length	Min. 128 mm Max. 356 mm (14 inches) Long document detection: 380 mm, or 1500 mm * TF + 10 (To enable or disable the long document scanning)
	3) Thickness	Based on common bond paper a) 0.08 to 0.13 mm for multiple page feeding b) 0.06 to 0.15 mm for single page feeding
	4) Shape	Rectangular
	5) Opacity	Documents allowing less than 40% of the scanner source light to pass through them.

Table 1.1 (2/11) Basic Performance Specifications

<table>
<tr><th>No.</th><th>Item</th><th>Specifications</th></tr>
<tr><td>4</td><td>Effective reading width</td><td></td></tr>
<tr><td></td><td colspan="2">
<table>
<tr><th>Document width</th><th>Communication Mode/Paper width</th><th>Effective reading width</th><th>Copy size</th></tr>
<tr><td>ISO A4 (210 mm) [INT'L/FTZ]</td><td>G3/A4</td><td>208 mm for TX
203.2 mm for local copy
(208 mm for local copy with Horizontal Reduction = ON)</td><td>A4</td></tr>
<tr><td>NA letter (216 mm) [US/CANADA]</td><td>G3/A4</td><td>215 mm for TX
203.2 mm for local copy
(214 mm for local copy with Horizontal Reduction = ON)</td><td>Letter</td></tr>
<tr><td>NA legal (216 mm) [US/CANADA]</td><td>G3/A4</td><td>215 mm for TX
203.2 mm for local copy
(214 mm for local copy with Horizontal Reduction = ON)</td><td>Legal</td></tr>
</table>
Note: Local copy: Printable reading width in local copy mode
</td></tr>
<tr><td>5</td><td>Automatic document feeder (ADF)</td><td>Max. 20 documents for OKIFAX4550/OKIOFFICE87: NA Letter or A4 (20-1b/75 gm)
Max. 15 documents:
NA Letter or A4 (16-28 lb/60-105 gm bond paper)

Documents shall be placed facedown on ADF stacker.
The first sheet will be fed first in the feeder and will exit facedown in the document stacker.</td></tr>
<tr><td>6</td><td>Document skew</td><td>Max. 1 mm skew over any advance of 100 mm. The occurence of skew exceeding 1 mm per 100 mm shall be 0.5% or less.</td></tr>
<tr><td>7</td><td>Document jam detection</td><td>1) Transmission will stop and line disconnection will occur when the end of a document is not detected within 356 mm after scanning begins (except for the long document scanning. TF + 10)

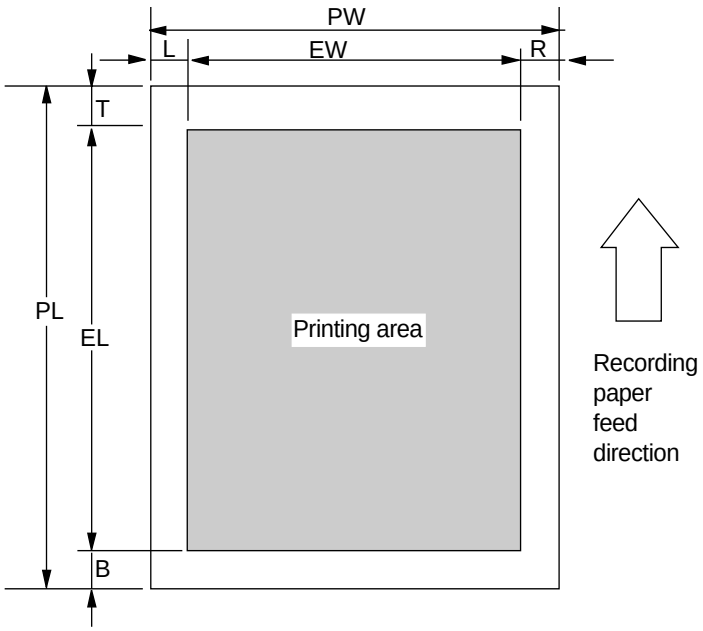
2) A jam will also be declared if the document does not reach the scanning position within 10 seconds after the start of a document feed.

Note: When a jam is detected during message transmission from the feeder, the machine will stop scanning and disconnect the line, but its receiving capability will remain valid.</td></tr>
<tr><td>8</td><td>Document jam removal</td><td>Manual release</td></tr>
</table>

Table 1.1 (3/11) Basic Performance Specifications

No.	Item	Specifications
9	Recording paper or sheet	For tray-paper: 1) Type: Plain paper cut (Bond paper) 2) Size: ISO A4 (210 mm × 297 mm) NA Letter (215.9 mm × 279.4 mm)/(8.5 inch × 11 inch) NA Legal (215.9 mm × 355.6 mm)/(8.5 inch × 14 inch) 3) Weight: 16 lb-24 lb/60-90 gm base weight Base weight is defined as the weight of 500 sheets of 431.8 mm (17 inch) by 558.8 mm (22 inch) or 1 sheet size 1000 mm by 1000 mm. 4) Thickness: 0.08 mm to 0.12 mm 5) Condition: New paper For the manual loading feeder 1) Type: Plain paper, transparency for overhead projector, colored paper, printed paper 2) Size: A4/NA Letter/NA Legal 3) Weight, thickness and condition: Same as above ***Note:*** One single sheet should be loaded on the manual paper feeder for one occasion. For best results use Oki Data recommended papers 1) Xerox 4200 (20 - lb/75 gm base weight paper) 2) L-type paper for photo-printers
10	Recording paper cassette	100 sheets/tray (Oki Data recommended paper)

Table 1.1 (4/11) Basic Performance Specifications

No.	Item	Specifications
11	Effective recording area	

Note: These tables do not include vertical and horizontal addressing deviations (+ or -3 mm) of recording paper.

1) Printable area

	NA LETTER SIZE		ISO A4 SIZE		14 inch LEGAL SIZE		13 inch LEGAL SIZE	
	inch	mm	inch	mm	inch	mm	inch	mm
PL	11	279.4	11.7	297	14	355.6	13	330.2
PW	8.5	216	8.27	210	8.5	216	8.5	216
EL	10.76	273.4	11.46	291	13.76	349.6	12.76	324.2
EW	8.0	203.2	8.0	203.2	8.0	203.2	8.0	203.2
T	0.12	3	0.12	3	0.12	3	0.12	3
B	0.12	3	0.12	3	0.12	3	0.12	3
L	0.25	6.35	0.13	3.4	0.25	6.35	0.25	6.35
R	0.25	6.35	0.13	3.4	0.25	6.35	0.25	6.35

2) Guaranteed printing area

	NA LETTER SIZE		ISO A4 SIZE		14 inch LEGAL SIZE		13 inch LEGAL SIZE	
	inch	mm	inch	mm	inch	mm	inch	mm
PL	11	279.4	11.7	297	14	355.6	13	330.2
PW	8.5	216	8.27	210	8.5	216	8.5	216
EL	10.5	266.7	11.2	284.3	13.5	342.9	12.5	317.5
EW	8.0	203.2	7.77	197.3	8.0	203.2	8.0	203.2
T	0.25	6.35	0.25	6.35	0.25	6.35	0.25	6.35
B	0.25	6.35	0.25	6.35	0.25	6.35	0.25	6.35
L	0.25	6.35	0.25	6.35	0.25	6.35	0.25	6.35
R	0.25	6.35	0.25	6.35	0.25	6.35	0.25	6.35

12	Copy stacking	The fax can discharge printed copies and stack them faceup. Maximum sheets on the copy stacker: 30* ***Note*:*** Oki Data recommended paper

Table 1.1 (5/11) Basic Performance Specifications

No.	Item	Specifications
13	Scanning resolution	Horizontal: • 300 dot/inch ***Note 1:*** In the local copy at standard (STD) resolution the dpi conversion is done from 300 dot/inch to 200 dot/inch. ***2:*** 600 dpi × 15.4 line/mm : Copy is available for OKIOFFICE87. Vertical: Transmission mode: • 300 dot/inch 3.85 line/mm (STD), 7.7 line/mm (FINE) or 15.4 line/mm (EX.FINE) ***Note:*** 300 dpi × 300 dpi: Transmission is available COPY mode: • 3.85 line/mm, 7.7 line/mm, 15.4 line/mm.
14	Image scanning method	NA Letter size (2592-bit) contact image sensor
15	Contrast control	1) Automatic background sensing A continuous document background of 0.3 OD (optical density) or less will be transmitted as white. 2) The LIGHT and DARK contrasts will automatically be adjusted to improve image quality. Slice level shifting has 3 levels of switch selection on operation panel.
16	Recording resolution	Horizontal: • 300 dot/inch • 600 dot/inch for OKIOFFICE87. Vertical: Fixed: 3.85 line/mm (STD), 7.7 line/mm (FINE), 15.4 line/mm (EX-FINE) 300 dot/inch (EX-FINE) Variable: Automatically adjusted to the paper length. • 784 to 1076 dot/inch • 300 to 412 dot/inch • 3.85 to 5.06 line/mm (STD) • 7.7 to 10.13 line/mm (FINE) • 15.4 to 20.24 line/mm (EX. FINE)
17	Recording system	Electro-photographic printing 1) 211.3mm (2496 bit) or 216.7mm (2560 bit) LED print head
18	Skew of recording paper	Maximum allowable skew is + or - 1 mm over an advance of 100 mm.
19	Copy darkness	1) Black image: Greater than 1.2 OD (Optical density) 2) White background: Not greater than 0.2 OD (Optical density)
20	Copy uniformity	Printed copies will exhibit a uniform density of the printed and background area: 1) From edge to edge: 25% 2) From copy to the next copy: 30%

Table 1.1 (7/11) Basic Performance Specifications

No.	Item	Specifications
21	Recording paper running out	The fax can detect the no-paper condition by a photosensor. When the paper has run out in the local copy operation, the scanning will stop with "PAPER OUT/JAM" on the LCD and an ALARM LED turns on without an alarm tone. When the paper has run out while a message is being received and the no-paper reception is activated, the LCD display will show "MSG. IN MEMORY", and the ALARM LED turns on.
22	Minimum scan line time for receiving	0 ms, when receiving in ECM mode or from an Oki Data facsimile. 5 ms at 15.4 line/mm or 7.7 line/mm and 10 ms at 3.85 line/mm when receiving from a non-Oki Data facsimile or non-ECM mode.
23	Coding scheme	1) One-dimensional coding scheme: Modified Huffman (MH) 2) Two-dimensional coding scheme: Modified READ (MR) Modified modified READ (MMR)
24	MODEM 1) High-speed Modem	a) ITU-T Rec. V.29 (9600/7200 bps) b) ITU-T Rec. V.27 ter (4800/2400 bps) c) ITU-T Rec. V.17 (14400/12000/9600/7200 bps) d) ITU-T Rec. V.33 (14400/12000 bps) e) ITU-T Rec. V.34 (33600/28800 bps)
	2) Low-speed Modem	ITU-T Rec. V.21 channel 2 (300 bps)
	3) ISDN G4	ITU-T Rec. T.563, T.521, T.503, T.62, T.6, T.70
25	Fallback	Automatic fallback will occur according to the following sequence by FTT, RTN or PPR.

Fallback rank	Transmission speed	Activated by FTT (Times)	Activated by RTN (Times)	Activated by PPR (Times)	Protocol
1st	14400 bps	1	1	4 (Note 1)	ITU-T V.17 (V.17)
2nd	12000 bps	1	1	4 (Note 1)	ITU-T V.17 (V.17)
3rd	9600 bps	1	1	4 (Note 1)	ITU-T V.17 (V.29)
4th	7200 bps	1	1	4 (Note 1)	ITU-T V.17 (V.29)
5th	4800 bps	2	1	4 (Note 1)	ITU-T V.27 ter.
6th	2400 bps	2	1	4 (Note 1)	ITU-T V.27 ter.

When the last trial fails, the transmitting station sends out a DCN signal to the remote station for disconnection.

Note 1: Continuous PPRs for the same partial page within each fallback rank.

2: V.34 fallback sequence
The modem automatically selects transmission speed according to the line condition.

Table 1.1 (8/11) Basic Performance Specifications

<table>
<tr><th>No.</th><th>Item</th><th>Specifications</th></tr>
<tr><td>26</td><td>Protocol</td><td>1) ITU-T Rec. T.30
2) Oki Data special protocol
High-speed protocol
The T.30 protocol signal from the transmitting station is sent at message transmission speed instead of 300 bps. (This function is disable when the H/Modem rate is set to 9.6 kbit/s by TF No.13)
Note : In Hihg-speed protocol, V.34 is not applied.

3) ITU-T G4 class 1 (option)</td></tr>
<tr><td>27</td><td>Transmission time</td><td>3 sec.(approx 3.2 sec) /ITU-T No. 1 evalution test chart

Note: This is Phase C time at 3.85 line/mm and 33600 bps for 3 sec. in MMR code transmission.
Sender ID is not added to the sending data.</td></tr>
<tr><td>28</td><td>Error correction scheme</td><td>ITU-T ECM defined in T4, T30 are providrd.
This should be applicable to MH, MR and MMR coding schemes.</td></tr>
<tr><td>29</td><td>Communication mode</td><td>Half-duplex</td></tr>
<tr><td>30</td><td>Ringing signal detection sensitivity
1) Voltage range</td><td>
25 to 150 V r.m.s.
Inoperative below 10 V

Note: This range may differ by the requirement of PTT.</td></tr>
<tr><td></td><td>2) Frequency range</td><td>20 to 68 Hz

Note: This range may differ by the requirement of PTT.</td></tr>
<tr><td></td><td>3) Ring response time</td><td>One-ringing signal or 5 to 30 seconds.
(Selectable in 5 sec. steps. F + OT9 + ← + 11)</td></tr>
<tr><td>31</td><td>Image memory</td><td><table><tr><th>Memory condition</th><th>[pages]</th></tr><tr><td>Standard (2M-byte)</td><td>160</td></tr></table>Note: ITU-T No.1 sample document is used to count the number of sheets. (MMR/STD/Sender ID : off)

Note: OKIFAX4550/OKIOFFICE87 does not back up the message received in memory for the power failure.</td></tr>
<tr><td>34</td><td>Overheat protection</td><td>The heater of the fuser unit is controlled within the predetermined temperature range by the thermistor. If the temperature of the heater exceeds the range, the LCD displays “PRINTER ALARM 4”.

Furthermore, the built-in thermostat in the fuser unit prevents the heater from being overheated even in the event of the failures in the above temperature control circuit.</td></tr>
</table>

Table 1.1 (9/11) Basic Performance Specifications

<table>
<tr><th>No.</th><th>Item</th><th>Specifications</th></tr>
<tr><td>35</td><td>PC interface applications (Option)</td><td>The following four modes are supported:
1) PC local printer function
2) PC scanner function
3) PC FaxModem function
4) Location Programing function

Note1: This function will be supplied as the OKIFAX 4550 option in case Oki Data can get the approval in respective countries without modifying the optional unit. (Hardware is standard and software is option for Bi-centro interface.)
2: This function is the standard for OKIOFFICE87.

For details, see product specification for MFP.</td></tr>
<tr><td>36</td><td>FAX2NET function (Option)</td><td>Each user's facsimile equipment can access the internet functions by communicating with the local FAX2NET server. The following four types are installed.
1) FAX over IP function
2) FAX to E-mail function
3) Virtual E-mail function
4) Broadcast function
5) Web Retrieval function
6) Prepaid Card Registration (Note)

Note: May not used according to dealer's conditions.

For details, see Appendix I "FAX2NET Function".</td></tr>
<tr><td>37</td><td>Power supply unit and Power consumption of the machine</td><td>Power consusmption of the machine (Typical power)

(1) OKIFAX4550 US/CANADA Versions
<table>
<tr><th>Mode</th><th>Typical Power</th><th>Max. Power</th></tr>
<tr><td>Transmit</td><td>16W</td><td>18W</td></tr>
<tr><td>Receive</td><td>104W</td><td>115W</td></tr>
<tr><td>Local copy</td><td>141W</td><td>157W</td></tr>
<tr><td>Standby</td><td>5.4W</td><td>6.1W</td></tr>
</table>
(2) OKIFAX4550 INT’L Versions
<table>
<tr><th>Mode</th><th>Typical Power</th><th>Max. Power</th></tr>
<tr><td>Transmit</td><td>18W</td><td>20W</td></tr>
<tr><td>Receive</td><td>102W</td><td>112W</td></tr>
<tr><td>Local copy</td><td>143W</td><td>157W</td></tr>
<tr><td>Standby</td><td>6.5W (0.35W)</td><td>7.7W (0.46W)</td></tr>
</table>
( ): Power save mode = ON
*Chart: ITU-T No. 1</td></tr>
</table>

Table 1.1 (10/11) Basic Performance Specifications

<table>
<tr><th>No.</th><th>Item</th><th>Specifications</th></tr>
<tr><td></td><td></td><td>
(3) OKIOFFICE87 US/CANADA Versions
<table>
<tr><th>Mode</th><th>Typical Power</th><th>Max. Power</th></tr>
<tr><td>Transmit</td><td>16W</td><td>18W</td></tr>
<tr><td>Receive</td><td>104W</td><td>115W</td></tr>
<tr><td>Local copy</td><td>141W</td><td>157W</td></tr>
<tr><td>Standby</td><td>5.4W</td><td>6.1W</td></tr>
</table>
(4) OKIOFFICE87 INT'L Versions
<table>
<tr><th>Mode</th><th>Typical Power</th><th>Max. Power</th></tr>
<tr><td>Transmit</td><td>18W</td><td>20W</td></tr>
<tr><td>Receive</td><td>102W</td><td>112W</td></tr>
<tr><td>Local copy</td><td>143W</td><td>157W</td></tr>
<tr><td>Standby</td><td>6.5W (0.35W)</td><td>7.7W (0.46W)</td></tr>
</table>
( ): Power save mode = ON
*Chart: ITU-T No. 1
</td></tr>
<tr><td>38</td><td>Ambient condition</td><td>
• Humidity
The machine will operate as specified at relative humidities in the range of 20 percent to 80 percent (non-condensing). Operation outside this range will be subject to the limitations shown in Table Temperature and Himidity.
• Temperature
The machine will operate as specified in the temperature range of 10 Celsius to 32 Celsius. Operation outside this range will be subject to the limitations shown in Table Temperature and Humidity.
</td></tr>
<tr><td></td><td></td><td>
Table Temperature and Humidity
<table>
<tr><th></th><th>In operation</th><th>Power off mode</th><th>During Storage</th><th>Unit</th></tr>
<tr><td>Temperature</td><td>50 - 90
(10 - 32)</td><td>32 - 110
(0 - 43)</td><td>14 - 110
(-10 - -43)</td><td>°F
(°C)</td></tr>
<tr><td>Humidity</td><td>20 - 80</td><td>10 - 90</td><td>10 - 90</td><td>%RH</td></tr>
<tr><td>Maximum wet bulb temperature</td><td>77
(25)</td><td>80.4
(26.8)</td><td>—</td><td>°F
(°C)</td></tr>
<tr><td>Minimum difference between wet and dry bulb temperatures</td><td>35.6
(2)</td><td>35.6
(2)</td><td>—</td><td>°F
(°C)</td></tr>
</table>
1. Storage conditions specified above apply to the machine in packed condition.
2. Temperature and humidity must be in the range where no condensation occurs.
</td></tr>
<tr><td>39</td><td>Dimension
(Main body)</td><td>1) Width: Approx. 316 mm
2) Depth: Approx. 383 mm
3) Height: Approx. 190 mm</td></tr>
<tr><td>40</td><td>Weight
(Main body)</td><td>Approx. 8 kg
Excluding recording paper and packing materials.</td></tr>
</table>

Table 1.1 (11/11) Basic Performance Specifications

No.	Item	Specifications
41	Attachment (to the main body)	1) AC power cord × 1 2) I/D unit × 1 (Already installed) 3) Toner cartridge × 1 4) Tray - Paper 5) Tray - Document 6) Document stacker × 1 7) Line cord × 1 8) One touch sheet × 1 (Already installed) 9) User's guide × 1

1.6 Reports and Lists

Table 1.2 shows Reports and Lists Specifications.
The described information for FAX2NET service referes to "FX-046FAX/MFP Product Specification".

Note: F +OT: Press FUNCTION and One-touch key
FP: Function program setting
TF: Technical function setting

Table 1.2 (1/2) Reports and Lists Specifications

No.	Item	Specifications
1	Call-back message	The transmitter sends a call-back message to the receiver only when the receiver does not respond to voice request of the transmitter.
2	Sender ID	The fax can transmit a programmed alphanumeric message, such as company's name, consisting of up to 32 characters. * (Outside only)
3	Transmitting subscriber identification(TSI) printing	Received TSI can be printed at the top of the received page. * TF + 05 (To enable or disable this function)
4	Cancel report (Power outage report)	The fax will automatically print out a power outage report when the AC power is restored after the power fuilure.
5	Activity report	The fax can print out an activity report manually, and provides a record of your fax machine's last 30 communications. This report does not contain the results of messages which were received without errors. However it does contain messages received in memory with or without errors. * REPORT PRINTOUT+1(Manual printout)
6	Message confirmation report	The fax can print out a message confirmation report manually or automatically in the following cases. (1) Manual print By pressing the COPY key after a communication (2) Automatic printout When the FP+01 (to enable or disable automatic printing after a communication) is set to Enable.
7	Broadcast entry report	The fax can print out a broadcast entry report if specified during operating sequence of a broadcast.
8	Broadcast confirmation report	The fax can print out a broadcast confirmation report manually or automatically. * COPY key (Manual printout): Pressed after a broadcast. * REPORT PRINTOUT + 2 (Manual printout) * FP +02 (To enable or disable automatic printing)
9	Confidential reception report	The fax can print out this report automatically on completion of a confidential reception.
10	Memory files report	Printing the list of received but not printed yet documents and waiting documents for transmission stored in the memory. * REPORT PRINTOUT + 3 (Manual printout)

Table 1.2 (2/2) Reports and Lists Specifications

No.	Item	Specifications
11	Telephone directory	This directory is printed manually. (REPORT PRINTING + 4)
12	Configuration report	This report is printed manually. (REPORT PRINTING + 5)
13	Active memory files	This report will be manually or automatically printed out for information of transmission/reception data stored in the memory. When there is no stored image data in the memory at all, the Active memory files is not printed out. (REPORT PRINTING +3)
14	Protocol dump (G3)	This report will be manually printed out for maintenance purpose. If the previous communication is G3, G3 communication protocol dump is printed out. (REPORT PRINTING +6)
15	Self-diagnosis report	This report will be manually printed out for maintenance purpose. (LOCAL TEST +1)
16	Log report	This report will be manually printed out for fault analysis (REPORT PRINTING)
17	Protocol dump (G4)	This report will be manually printed out for maintenance purpose. If it is G4, G4 communication protocol dump is printed out. (REPORT PRINTING +6)
18	G4 Log report	This report will be manually printed out for fault analysis when G4 board is installed.

MESSAGE CONFIRMATION

07/01/2000 08:05
ID=OKI

DATE	S,R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT	
07/01	00'20"	OKI FAX	CALLING	02	OK	0000

Message Confirmation Report (MCF)

MESSAGE CONFIRMATION

07/01/2000 17:05
ID=OKI

DATE	S,R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT	
07/01	00'20"		B.C.	01	COMP.	60A0

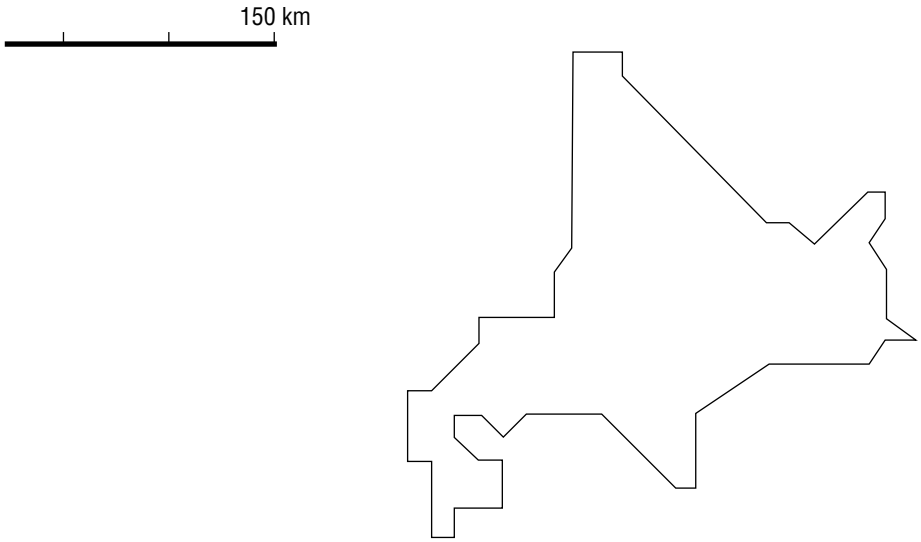


IMAGE in MCF with Memory TX

ACTIVITY REPORT

07/01/2000 17:05
ID=OKI

TOTAL TIME TX=08:22' RX=17:30'

DATE	TIME	S,R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT		
06/29	10:00	01'20"	OKI FAX	TX	02	OK	0000	
06/29	10:10	01'00"	0485 88 3385	TX	00	STOP	9080	
06/29	10:30	00'20"	ODS TAKASAKI	TX	00	NO	90C1	
06/29	12:05	01'20"	OKI FAX	TX	03	OK	0000	
06/29	13:00	00'20"	03 5476 4300	TX	01	OK	0000	
06/29	15:40	03'25"	ODS TAKASAKI	CONF=02	03	OK	0000	*1
06/29	19:00	00'00"	OKI FAX		01	OK	0000	*2
06/30	10:10	02'00"	OKI SHIBAURA	RX	05	NO	908E	
06/30	10:22	00'12"	0495 22 5400	TX	00	STOP	9080	
06/30	10:50	01'20"	0495 22 5400	RX	03	NO	9090	
06/30	12:05	00'20"	OKI FAX	TX	01	STOP	9080	
06/30	15:00	01'30"		RX	03	OK	0000	*3
06/30	15:30	00'20"		TX	01	OK	0000	
06/30	19:04	00'20"	03 5476 4300	TX	00	STOP	9080	
07/01	09:00	01'11"		TX	02	OK	0000	
07/01	10:20	00'20"	03 5476 4300	TX	02	STOP	9080	
07/01	10:35	02'23"		CONF=03	02	OK	0000	*1
07/01	10:50	00'20"	ODS TAKASAKI	RX	01	OK	0000	
07/01	11:03	00'00"	OKI FAX	TX	00	STOP	9080	
07/01	13:00	00'24"	03 5476 4300		01	NO	9082	*4
07/01	16:00	01'20"	027 324 2117	POLL=01	01	OK	0000	*5
07/01	16:10	00'40"	ODS	POLL TX	01	OK	0000	*6

*1 : Confidential reception
*2 : Manual TX
*3 : Memory reception
*4 : Manual reception
*5 : Bulletin TX wait state
*6 : Memory/Feeder polling TX wait state

Activity Report

ACTIVE MEMORY FILES

07/01/2000 17:05
ID=ODC

RECEPTION

ENTRIES	PAGES
05	20

PERSONAL BOX

BOX NO.	MODE	ENTRIES	PAGES
01	CONF	03	20
02	CONF	01	02
05	POLL	01	05

POLLING TX/RX

DATE	TIME	DISTANT STATION ID	MODE	PAGES
			POLL TX	03
07/02	12:05	OKI	POLL RX	

TRANSMISSION

DATE	TIME	DIDTANT STATION ID	MODE	PAGES
07/01	20:00	OKI DATA SYSTEMS	TX	03
07/01	12:03	0273242117	TX	01
07/01	19:00	ODC TAKASAKI	TX	02

Active Memory Files

Configuration
Print conditions

1) Setting by user
   Two pages shall be printed out. Setting only is printed on the first page and Dial Parameter setting, SYSTEM DATA PRG. and Fax2Net/ISDN registration.are printed on the second page.
2) Setting by service persons
   Printed as the third page when Service Bit = ON.

<First page>

3) 06: MONITOR VOLUME
   “OFF,” “LOW,” “MIDDLE,” “HIGH-MID,” and “HIGH” are printed.
4) 13: PAPER SIZE
   “A4”, “LETTER”, “LGL13”, “LGL14”, “A5”, “A6”, “JIS-B5”
5) 28: TONER SAVE
   “ON,” and “OFF” are printed.
6) 29: CNG COUNT
   “1” - “5” are printed.
7) 30: ISDN DIAL MODE
   “G4,” and “G3” are printed. Left blank when no ISDN board is mounted.
8) 31: SPEECH RECEIVE
   “ON,” and “OFF” are printed. Left blank when no ISDN board is mounted.
9) 32: USB CONV. MODE
   “ON,” and “OFF” are printed. Left blank for OKIFAX4550.
10) 33: PAPER SIZE CHECK
    “ON,” and “OFF” are printed. Left blank for OKIFAX4550. Left blank for OKIOFFICE87 when 32:USB CONV.MODE is OFF.
11) 34: PRINT JOB T.O.
    “5SEC,” “ 30SEC,” and “5MIN” are printed. Left blank for OKIFAX4550. Left blank for OKIOFFICE87 when 32:USB CONV.MODE is OFF.
12) Left blank when an ISDN board is mounted or Service Bit = OFF at settings Nos.10, 11, 12, 15, 16, and 29.
13) Left blank when MFP has no option at setting No.21.

<Second page>

14) DIAL PARAMETER: All parameters are printed when Service Bit = ON.
    Some parameters are left blank depending on the Country Code (XPARA bit) when Service Bit =OFF.
15) TEL N0.: Up to 20 digits are printed.
16) CALL BACK N0.: Up to 20 digits are printed.
17) FORWARDING N0.: Up to 32 digits are printed for OKIFAX4550 and up to 40 digits for OKIOFFICE87.
18) SERVER TEL N0.: When FAX2NET FUNCTION is set to ON, up to 32 digits are printed for OKIFAX4550 and up to 40 digits for OKIOFFICE87.
19) ACCOUNT N0.: Up to 14 digits are printed when FAX2NET FUNCTION is set to ON.
20) PREFIX N0.1 - N0.3: Up to 10 digits of prefix No. are printed when FAX2NET FUNCTION is set to ON.
21) ISDN COUNTRY CODE: Up to 3 digits are printed when an ISDN board is mounted.
22) ISDN(G4) N0.: Up to 20 digits are printed when an ISDN board is mounted.
23) ISDN(G4) ID: Up to 10 digits are printed when an ISDN board is mounted.
24) ISDN SUB N0.: Up to 19 digits are printed when an ISDN board is mounted.
25) ISDN CALLED N0.: Up to 20 digits are printed when an ISDN board is mounted.
26) Dial parameters other than REDIAL TRIES, REDIAL INTERVAL, PBX LINE, AUTO START, and DIAL PREFIX are left blank when an ISDN board is mounted and Service Bit = OFF.
27) 33: V.34 TX RETRY
    “ON,” “OFF” are printed.
28) 34: STYMBOL. RATE
    “2400,” “2800,” “3200,” and “3429” are printed.
29) 35: LEASED LINE
    “ON,” “OFF” are printed.

30) 36: CED SEND
“ON,” “OFF” are printed.
31) 37: FAX2NET FUNCTION
“ON,” “OFF” are printed.
32) 38: TOP FEED
“-10MM,” “-9MM,” “ —, “ 0MM,” “+1MM’” — “+9M”
39: BOTTOM FEED
“-2MM,” —, “0MM,” “+1MM” —”+10MM”
33) 40: G3/G4 LEARNING
“ON,” and “OFF” are printed. Left blank when no ISDN board is mounted.
34) 41: LLC CHECK
ON,” and “OFF” are printed. Left blank when no ISDN board is mounted.
35) 42: G3 SETUP BC
“3.1K AUDIO” and “:SPEECH” are printed. Left blank when no ISDN board is mounted.
36) 43: G3 FALLBACK CAUSE
Out of the following 54 service codes, only the codes corresponding to G3 fallback are printed. Service codes excluding fallback are left blank.
Left blank when ISDN board is not mounted.

BA01	BA02	BA03	BA06	BA07	BA10	BA11	BA12	BA13	BA15
BA16	BA1A	BA1B	BA1C	BA1D	BA1E	BA1F	BA22	BA26	BA29
BA2A	BA2B	BA2C	BA2F	BA31	BA32	BA39	BA3A	BA3F	BA41
BA42	BA45	BA46	BA4F	BA51	BA52	BA53	BA54	BA55	BA56
BA58	BA5B	BA5F	BA60	BA61	BA62	BA63	BA64	BA65	BA66
BA6F	BA7F	BB01	BB07						

Report image

CONFIGURATION P1

02/14/2000 12:00
ID=ODS

FUNCTION LIST

01:MCF (SINGLE-LOC.) OFF	02:MCF (MULTI-LOC.) ON	03:ERR.REPORT (MCF) ON
04:IMAGE IN MCF ON	05:SENDER ID. ON	06:MONITOR VOLUME LOW
07:BUZZER VOLUME MIDDLE	08:CLOSED NETWORK OFF	09:TX MODE DEFAULT STD/NORMAL
10:T/F TIMER PRG. 35SEC	11:RING RESPONSE 1 RING	12:DISTINCTIVE RING OFF
13:PAPER SIZE A4	14:USER LANGUAGE ENGLISH	15:INCOMING RING ON
16:REMOTE RECEIVE OFF	17:MEM./FEEDER SWITCH MEMORY	18:POWER SAVE MODE ON
19:ECM FUNCTION ON	20:REMOTE DIAGNOSIS OFF	21:PC/FAX SWITCH ON
22:NO TONER MEM.RX OFF	23:MEM.FULL SAVE ON	24:CONTINUOUS TONE OFF
25:INSTANT DIAL ON	26:RESTRICT ACCESS OFF	27:WIDTH REDUCTION OFF
28:TONER SAVE OFF	29:CNG COUNT 1	30:ISDN DIAL MODE G4
31:SPEECH RECEIVE ON	32:USB CONV. MODE ON	33:PAPER SIZE CHECK ON
34:PRINT JOB T.O. 30SEC		

Configuration Report (User)

CONFIGURATION P2

02/14/2000 12:00
ID=ODS

DIAL PARAMETER

REDIAL TRIES	3 TRY	REDIAL INTERVAL	3 MIN
DIAL TONE DETECT	OFF	BUSY TONE DETECT	ON
MF(TONE)/DP(PULSE)	MF	PULSE DIAL RATE	10 PPS
PULSE MAKE RATIO	39%	PULSE DIAL TYPE	N
MF(TONE) DURATION	100MS	PBX LINE	OFF
PBX TYPE	NORMAL	AUTO START	ON
DIAL PREFIX	OFF		

TEL NO. = 12345678901234567890
CALL BACK NO. = 12345678901234567890
FORWARDING NO. =

SERVER TEL NO. = 12345678901234567890123456789012
ACCOUNT NO. = 12345678901234
PREFIX NO.1 = 1234567890
NO.2 = 1234567890
NO.3 = 1234567890

ISDN COUNTRY CODE = 081
ISDN(G4) NO. = 12345678901234567890
ISDN(G4) ID = ABCDEFGHIJ
ISDN SUB NO. = 1234567890123456789
ISDN CALLED NO. = 12345678901234567890

Configuration Report (User)

CONFIGURATION P3

02/14/2000 12:00
ID=ODS

FUNCTION LIST

01:SERVICE BIT ON	02:MONITOR CONT. ON	03:COUNTRY CODE GER
04:TIME/DATE PRINT OFF	05:TSI PRINT ON	06:TAD MODE TYPE2
07:REAL TIME DIAL TYPE2	08:TEL/FAX SWITCH ON	09:MDY/DMY MDY
10:LONG DOC. SCAN ON	11:TONE FOR ECHO OFF	12:MH ONLY OFF
13:H/MODEM RATE 33.6K	14:T1(TX) TIMER VALUE 059	15:T1(RX) TIMER VALUE 035
16:T2 TIMER VALUE 130	17:DIS BIT32 ON	18:ERR CRITERION VALUE 10
19:OFF HOOK BYPASS OFF	20:NL EQUALIZER OKM	21:ATTENUATOR 10 DB
22:T/F TONE ATT 10 DB	23:MF. ATT 3 DB	24:RING DURA. * 10MS 12
25:CML TIMING * 100MS 03	26:LED HEAD STROBE 10100	27:MEDIA TYPE MEDIUM
28:TR LATCH CURRENT 0	29:NSF SWITCH OFF	30:ID/TSI PRIORITY ID
31:TONER COUNT CLEAR OFF	32:PARALLEL PICK UP OFF	33:V.34 TX RETRY ON
34:SYMBOL RATE 3429	35:LEASED LINE OFF	36:CED SEND ON
37:FAX2NET FUNCTION ON	38:TOP FEED OMM	39:BOTTOM FEED OMM
40:G3/G4 LEARNING ON	41:LLC CHECK OFF	42:G3 SETUP BC 3.1K AUDIO

43:G3 FALLBACK CAUSE

BA01	BA02	BA03	BA06	BA07	BA10	BA11	BA12	BA13	BA15
BA16	BA1A	BA1B	BA1C	BA1D	BA1E	BA1F	BA22	BA26	BA29
BA2A	BA2B	BA2C	BA2F	BA31	BA32	BA39	BA3A	BA3F	BA41
BA42	BA45	BA46	BA4F	BA51	BA52	BA53	BA54	BA55	BA56
BA58	BA5B	BA5F	BA60	BA61	BA62	BA63	BA64	BA65	BA66
BA6F	BA7F	BB01	BB07						

Configuration Report (Service bit = ON)

Telephone Directory
Print conditions
Formats of OKIFAX4550, and OKIOFFICE87 shall be made common.

		OKIFAX4550	OKIOFFICE87
Number of OTs		10	
Number of ADs		70	100
Number of groups		5	
Maximum number of digits of OT/AD Tel No.		32	40
Maximum number of digits of OT OR Tel No.		32	40
Maximum number of digits of Email/Web		64 (Alphabetic small letters can be printed.)	
Email/Web registered OT		All OTs (10)	
Communication parameter		All OT/ADs excluding Email/Web registered OT	
	G3-ECHO	ON/OFF	
	G3-RATE	4.8K/9.6K/14.4K/28.8K/33.6K	
	MODE	G3/G4	

(See section 4.11.7 for printed characters)

	OKIFAX4550	OKIOFFICE87
1st page	OT1 ~ 10 + AD01 ~ 45	OT1 ~ 10 + AD01 ~ 45
2nd page	AD46 ~ 70	AD46 ~ 70
3rd page	Group 1 ~ 5	Group 1 ~ 5
4th page		
5th page		
6th page		
7th page		
8th page		

Report is output for registration pages corresponding to the above list.

Example of OKIFAX4550:
- For OT registration / AD01-45 registration, Page1; OT + AD-1-45
  For registration as above in group, Page1: OT + AD01-45/Page2: Group
- For OT registration/AD01-45 registration/AD46 and succeeding registration, Page1: OT+AD01-45 and Page2; AD46-70
  For registration as above in group, Page1: OT + AD01-45/Page2: AD46-70/Page3: Group
- AD46 and succeeding registration, Page1: Only AD46 - 70
- For registration of in group, Page1: AD46-70/Page2: Group

Report image

OKIFAX4550

TELEPHONE DIRECTORY P1

02/14/2000 12:00
ID=ODS

	LOCATION ID	TEL NO.	G3-ECHO/G3-RATE/MODE
ONE TOUCH			
1	ABCDEFGHIJKLMNO	12345678901234567890123456789012	ON / 33.6K / G4
	OR	12345678901234567890123456789012	
2	OT2	123456789012345678901234567890	OFF / 9.6K / G3
	OR		
3	OT3	12345678901234567890	ON / 33.6K / G4
	OR		
4	OT4	12345678901234567890	ON / 33.6K / G4
	OR		
5	OT5	12345678901234567890	ON / 33.6K / G4
	OR		
6	s-ishika@okidata.cp.jp		
7	http://www.fax2net.com/		
8	OT8	12345678901234567890	ON / 33.6K / G4
	OR		
9	http://ibodt78.taka.okidata.co.jp/odsnews		
10	OT10	12345678901234567890	ON / 33.6K / G4
	OR		
AUTO DIAL			
01	ABCDEFGHIJKLMNO	12345678901234567890123456789012	ON / 33.6K / G4
02	AD02	123456789012345678901234567890	ON / 33.6K / G4
03	AD03	12345678901234567890	ON / 33.6K / G4
04			ON / 33.6K / G4
05			ON / 33.6K / G4
06			ON / 33.6K / G4
07			ON / 33.6K / G4
08			ON / 33.6K / G4
09			ON / 33.6K / G4
10			ON / 33.6K / G4
11			ON / 33.6K / G4
12			ON / 33.6K / G4
13			ON / 33.6K / G4
14			ON / 33.6K / G4
15			ON / 33.6K / G4
16			ON / 33.6K / G4
17			ON / 33.6K / G4
18			ON / 33.6K / G4
19			ON / 33.6K / G4
20			ON / 33.6K / G4
21			ON / 33.6K / G4
22			ON / 33.6K / G4

41			ON / 33.6K / G4
42			ON / 33.6K / G4
43			ON / 33.6K / G4
44			ON / 33.6K / G4
45			ON / 33.6K / G4

OKIFAX4550 Telephone Directory (1/3)

TELEPHONE DIRECTORY P2

02/14/2000 12:00
ID=ODS

AUTO DIAL	LOCATION ID	TEL NO.	G3-ECHO/G3-RATE/MODE
46	AD46	12345678901234567890123456789012	ON / 33.6K / G4
47	AD47	1234567890123456789012345678901234567890	ON / 33.6K / G4
48	AD48	12345678901234567890	ON / 33.6K / G4
49			ON / 33.6K / G4
50			ON / 33.6K / G4
51			ON / 33.6K / G4
52			ON / 33.6K / G4
53			ON / 33.6K / G4
54			ON / 33.6K / G4
55			ON / 33.6K / G4
56			ON / 33.6K / G4
57			ON / 33.6K / G4
58			ON / 33.6K / G4
59			ON / 33.6K / G4
60			ON / 33.6K / G4
61			ON / 33.6K / G4
62			ON / 33.6K / G4
63			ON / 33.6K / G4
64			ON / 33.6K / G4
65			ON / 33.6K / G4
66			ON / 33.6K / G4
67			ON / 33.6K / G4
68			ON / 33.6K / G4
69			ON / 33.6K / G4
70			ON / 33.6K / G4

TELEPHONE DIRECTORY P3

02/14/2000 12:00
ID=ODS

GROUP NUMBER = #1 #2 #3 #4 #5

<#1 ONE TOUCH>
1 2 3 4 5 6 7 8 9 10

<#1 AUTO DIAL>
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69
70

<#2 ONE TOUCH>

<#2 AUTO DIAL>

<#3 ONE TOUCH>

<#3 AUTO DIAL>

<#4 ONE TOUCH>

<#4 AUTO DIAL>

<#5 ONE TOUCH>

<#5 AUTO DIAL>

OKIFAX4550 Telephone Directory (3/3)

TELEPHONE DIRECTORY P1

02/14/2000 12:00
ID=ODS

	LOCATION ID	TEL NO.	G3-ECHO/G3-RATE/MODE
ONE TOUCH			
1	ABCDEFGHIJKLMNO	12345678901234567890123456789012	ON / 33.6K / G4
	OR	12345678901234567890123456789012	
2	OT2	12345678901234567890123456789012	OFF / 9.6K / G3
	OR		
3	OT3	12345678901234567890	ON / 33.6K / G4
	OR		
4	OT4	12345678901234567890	ON / 33.6K / G4
	OR		
5	OT5	12345678901234567890	ON / 33.6K / G4
	OR		
6	s-ishika@okidata.cp.jp		
7	http://www.fax2net.com/		
8	OT8	12345678901234567890	ON / 33.6K / G4
	OR		
9	http://ibodt78.taka.okidata.co.jp/odsnews		
10	OT10	12345678901234567890	ON / 33.6K / G4
	OR		
AUTO DIAL			
01	ABCDEFGHIJKLMNO	12345678901234567890123456789012	ON / 33.6K / G4
02	AD02	12345678901234567890123456789012	ON / 33.6K / G4
03	AD03	12345678901234567890	ON / 33.6K / G4
04			ON / 33.6K / G4
05			ON / 33.6K / G4
06			ON / 33.6K / G4
07			ON / 33.6K / G4
08			ON / 33.6K / G4
09			ON / 33.6K / G4
10			ON / 33.6K / G4
11			ON / 33.6K / G4
12			ON / 33.6K / G4
13			ON / 33.6K / G4
14			ON / 33.6K / G4
15			ON / 33.6K / G4
16			ON / 33.6K / G4
17			ON / 33.6K / G4
18			ON / 33.6K / G4
19			ON / 33.6K / G4
20			ON / 33.6K / G4
21			ON / 33.6K / G4
22			ON / 33.6K / G4
41			ON / 33.6K / G4
42			ON / 33.6K / G4
43			ON / 33.6K / G4
44			ON / 33.6K / G4
45			ON / 33.6K / G4

OKIOFFICE87 Telephone Directory (1/3)

TELEPHONE DIRECTORY P2

02/14/2000 12:00
ID=ODS

AUTO DIAL	LOCATION ID	TEL NO.	G3-ECHO/G3-RATE/MODE
46	AD46	12345678901234567890123456789012	ON / 33.6K / G4
47	AD47	123456789012345678901234567890	ON / 33.6K / G4
48	AD48	12345678901234567890	ON / 33.6K / G4
49			ON / 33.6K / G4
50			ON / 33.6K / G4
51			ON / 33.6K / G4
52			ON / 33.6K / G4
53			ON / 33.6K / G4
54			ON / 33.6K / G4
55			ON / 33.6K / G4
56			ON / 33.6K / G4
57			ON / 33.6K / G4
58			ON / 33.6K / G4
59			ON / 33.6K / G4
60			ON / 33.6K / G4
61			ON / 33.6K / G4
62			ON / 33.6K / G4
63			ON / 33.6K / G4
64			ON / 33.6K / G4
65			ON / 33.6K / G4
66			ON / 33.6K / G4
67			ON / 33.6K / G4
68			ON / 33.6K / G4
69			ON / 33.6K / G4
70			ON / 33.6K / G4
91			ON / 33.6K / G4
92			ON / 33.6K / G4
93			ON / 33.6K / G4
94			ON / 33.6K / G4
95			ON / 33.6K / G4
96			ON / 33.6K / G4
97			ON / 33.6K / G4
98			ON / 33.6K / G4
99			ON / 33.6K / G4
100			ON / 33.6K / G4

OKIOFFICE87 Telephone Directory (2/3)

TELEPHONE DIRECTORY P3

02/14/2000 12:00
ID=ODS

GROUP NUMBER = #1 #2 #3 #4 #5

<#1 ONE TOUCH>
1 2 3 4 5 6 7 8 9 10

<#1 AUTO DIAL>
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92
93 94 95 96 97 98 99 100

<#2 ONE TOUCH>

<#2 AUTO DIAL>

<#3 ONE TOUCH>

<#3 AUTO DIAL>

<#4 ONE TOUCH>

<#4 AUTO DIAL>

<#5 ONE TOUCH>

<#5 AUTO DIAL>

OKIOFFICE87 Telephone Directory (3/3)

G3 Protocol Dump Image

PROTOCOL DUMP P1

12/24/1998 19:00
ID=OKI TAKASAKI

DATE	TIME	S,R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT
12/24	18:56	00'33"	12345678901234567890123 4	TX	002	OK 0000

FCF

TX		NSS	PPS_MPS	PPS_EOP	DCN
RX	NSF DIS	CFR	MCF	MCF	
TX					
RX					
TX					
RX					
TX					
RX					

TRANSMITTED FRAME

DIS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DTC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DIS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
NSF
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSS
FF C8 C4 00 00 84 80 30 40 E4 10 40 B8 39 20 0C 0C 0C 0C 30 82 4A AA 82 42 92 12 CA 04 92 D2 F2
80 40 80 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
CSI/CIG/TSI
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
SEP/SUB
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
SID
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
V34
CM JM
00 00 00 00 00 00 00 00

SYMBOL RATE(SPS) =
DATA SIGNALLING RATE(BPS) =
RESULT 00

MODEM TRACE
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Protocol Dump Report (G3)

PROTOCOL DUMP P2

12/24/1998 19:00
ID=OKI TAKASAKI

```
RECEIVED FRAME

DIS
FF C8 01 00 73 17 22 00 00 00 00 00 00 00 00 00 00 00 00
DTC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DCS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
NSF
FF C0 04 00 00 84 80 08 40 F4 10 40 F9 7D 20 0C 0C 0C 0C 90 F2 52 72 F2 12 04 92 D2 F2 80 F0 80
40 80 50 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
CSI/CIG/TSI
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
SEP/SUB
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
SID
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
V34
CM              JM
00 00 00 00     00 00 00 00

MODEM TRACE
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

Protocol Dump Report (G3)

Report Image (OKIFAX4550)

BROADCAST ENTRY REPORT

02/14/2000 12:00
ID=ODS

```
      LOCATION ID                                    LOCATION ID
ONE TOUCH
   1=12345678901234567890123456789012             2=12345678901234567890123456789012
   3=OKI DATA CORP.                               4=s-ishika@okidata.co.jp
   5=timomo@alles.or.jp                           6=0273265978
   7=0273261447                                  10=0273265980

AUTO DIAL
  01=12345678901234567890123456789012            02=12345678901234567890123456789012
  03=ODS                                         04=OKI DATA SYSTEM
  05=AD05                                        06=AD06
  07=AD07                                        08=AD08
  09=AD09                                        10=AD10
  11=AD11                                        12=AD12
  13=AD13                                        14=AD14
  15=AD15                                        16=AD16
  17=AD17                                        18=AD18
  19=AD19                                        20=AD20
```

```
  47=AD47                                        48=AD48
  49=AD49                                        50=AD50
  51=AD51                                        52=AD52
  53=AD53                                        54=AD54
  55=AD55                                        56=AD56
  57=AD57                                        58=AD58
  59=AD59                                        60=AD60
  61=AD61                                        62=AD62
  63=AD63                                        64=AD64
  65=AD65                                        66=AD66
  67=AD67                                        68=AD68
  69=AD69                                        70=AD70

KEY PAD
  12345678901234567890123456789012
  1234567890123456789012345678901234567890
  123456789012345678901234567890123456789012345678
  12345678901234567890123456
  123456789012345678901234
  1234567890123456789012
  12345678901234567890
  123456789012345678
  1234567890123456
  12345678901234
```

OKIFAX4550 Broadcast Entry Report

Report Image (OKIOFFICE87)

BROADCAST ENTRY REPORT

02/14/2000 12:00
ID=ODS

```
      LOCATION ID                                    LOCATION ID
ONE TOUCH
   1=12345678901234567890123456789012             2=12345678901234567890123456789012
   3=OKI DATA CORP.                               4=s-ishika@okidata.co.jp
   5=timomo@alles.or.jp                           6=0273265978
   7=0273261447                                  10=0273265980

AUTO DIAL
  01=12345678901234567890123456789012            02=12345678901234567890123456789012
  03=ODS                                         04=OKI DATA SYSTEM
  05=AD05                                        06=AD06
  07=AD07                                        08=AD08
  09=AD09                                        10=AD10
  11=AD11                                        12=AD12
  13=AD13                                        14=AD14
  15=AD15                                        16=AD16
  17=AD17                                        18=AD18
  19=AD19                                        20=AD20
  21=AD21                                        22=AD22
  23=AD23                                        24=AD24
  25=AD25                                        26=AD26
```

```
  69=AD69                                        70=AD70
  71=AD71                                        72=AD72
  73=AD73                                        74=AD74
  75=AD75                                        76=AD76
  77=AD77                                        78=AD78
  79=AD79                                        80=AD80
  81=AD81                                        82=AD82
  83=AD83                                        84=AD84
  85=AD85                                        86=AD86
  87=AD87                                        88=AD88
  89=AD89                                        90=AD90
  91=AD91                                        92=AD92
  93=AD93                                        94=AD94
  95=AD95                                        96=AD96
  97=AD97                                        98=AD98
  99=AD99                                       100=AD100

KEY PAD
  12345678901234567890123456789012
  12345678901234567890123456789012
  12345678901234567890123456789012
  12345678901234567890123456
  12345678901234567890123456789012
  12345678901234567890123456789012
  12345678901234567890
  12345678901234567890
  1234567890123456
  12345678901234
```

OKIOFFICE87 Broadcast Entry Report

BROADCAST CONFIRMATION REPORT

07/01/2000 17:05
ID=OKI

PAGES = 01
START TIME = 07/01 10:00
TOTAL TIME = 00:02'30"

	LOCATION ID	PAGES	RESULT	LOCATION ID	PAGES	RESULT
ONE TOUCH						
1 =	HEAD OFFICE	01	OK	2 = OT2	01	OK
3 =	OT3	01	OK	4 = OT4	01	OK
5 =	OT5	01	OK			
AUTO DIAL						
01 =	AD1	01	OK	02 = AD2	01	OK
03 =	AD3	01	OK	04 = GERMAN	01	OK
05 =	AD5	01	OK			
KEYPAD						
	1234	01	OK			
	3456	01	OK			
	5678	01	OK			

Broadcast Confirmation Report

POWER OUTAGE REPORT

07/01/2000 17:05
ID=OKI

DATE	TIME	S,R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT	
06/30	10:10		0485-88-3385			LOST	9080
06/30	10:30		ODS TAKASAKI		03	LOST	0000
06/30	12:05	01'20"	OKI FAX	CONF=01	03	LOST	0000
06/30	13:00	00'20"	03-5476-4300	RX	01	LOST	0000
06/30	10:50	01'20"	0495-22-5400	RX	03	LOST	0000
06/30	15:00			B.C.	01	LOST	

Note: Memory receptin only is printed on the mode in the report as called.

POWER OUTAGE REPORT

CONFIDENTIAL RX REPORT

07/01/2000 17:05
ID=OKI

DATE	TIME	S,R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT	
07/01	17:00	00'00"	OKI FAX	CONF=01	02	OK	0000

Confidential RX Report

07/01/2000 09:24 OKI SHIBAURA → OKI HONJO NO.002

PLEASE CALL BACK

OKI SHIBAURA

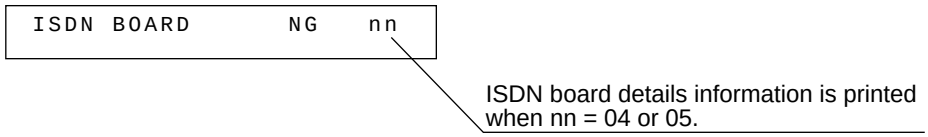
✆03 5476 1234

Call Back Message

Self Diagnosis Report
Print conditions

1) The following self diagnosis results are always printed.
   - CPU - ROM, FLASH - PROGRAM / LANGUAGE / DEFAULT version read and hush check.
   - CPU-RAM, FLASH - RAM read/write check
   - Image processor LSI RAM check
   - Setting DEFAULT TYPE and reading clock at self diagnosis execution.

2) The following printing differs depending on the machine type of OKIFAX4550/OKIOFFICE87 and on the condition of option provided or not.
   *1 "4M" is printed for OKIFAX4550 and "6M" for OKIOFFICE87.
   *2 Printed only when MFP option is provided. "MFG:," "MDL:," and "DES:" information is printed out of ID character strings of PnP device. Small letters can be printed. The maximum number of each of letters and characters shall be 45.
   *3 Printing is available for OKIFAX5650 only when option memory is mounted. ("2M." or "4M")
   *4 Printed only when ISDN option is provided.
   When performing self diagnosis, ISDN board test is executed and its result (error information at power on is partially adopted) is printed.
   The print contents at ISDN error are as shown below.



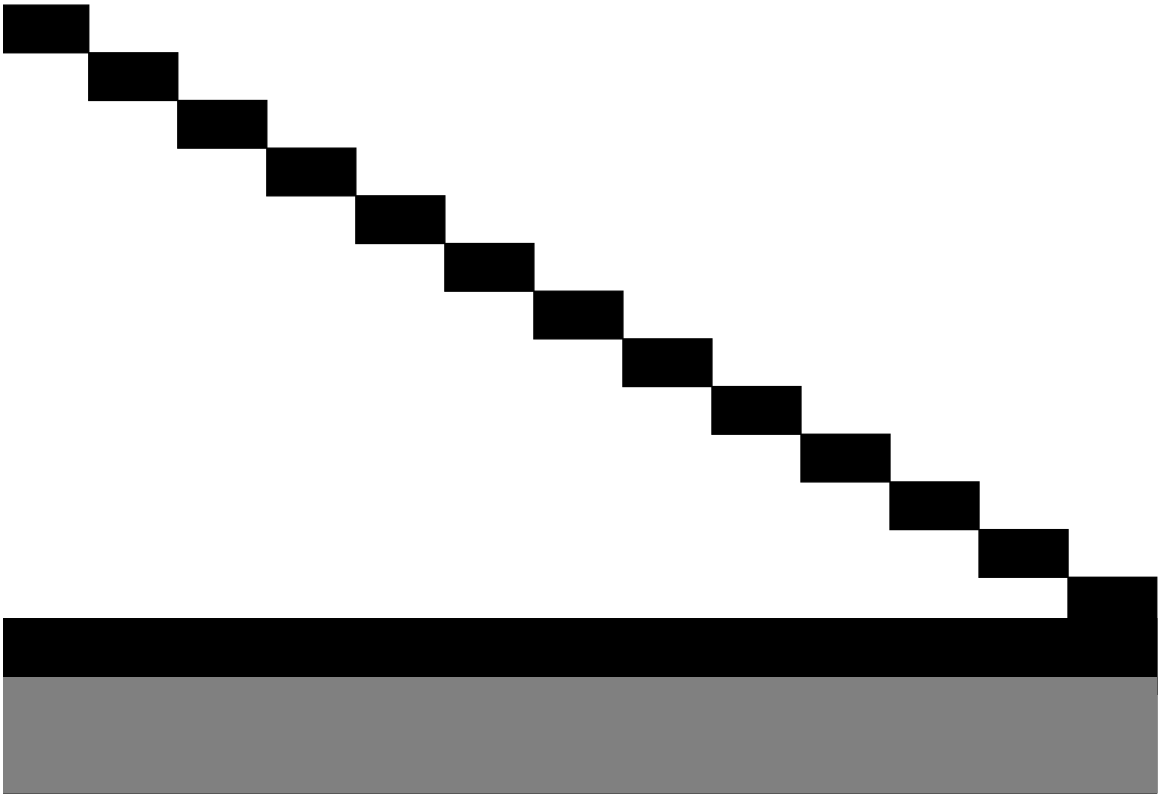
nn=01: Waiting PC loading
When turning on power, BOOT2 signal from HOST side was in PC loading mode.

nn=02: Board faulty
When turning on power, PROGRAM HUSH of ISDN board was no good.

nn=03: Board faulty
Initial sequence between boards was not executed in spite of elapse of 10 seconds after turning on power. (Status window did not obtain normal value.)

nn=04 Board faulty
Initial sequence of ISDN LSI was not executed when turning on power. (No response to command, Response no good)

nn=05: ISDN LSI faulty
ISDN LSI test function (ROM/RAM test, loop test) resulted no good.



```
CPU-ROM   VERSION  aaaa
          HASH     OK   hhhh
CPU-RAM            OK
PROGRAM   VERSION  aaaa
          HASH     OK   hhhh
LANGUAGE  VERSION  aaaa
          HASH     OK   hhhh
DEFAULT   VERSION  aaaa
          HASH     OK   hhhh
RAM1      4M       OK                          *1
RAM2               OK
DEFAULT TYPE       01   03/03/2000  12:00
DEVICE ID          MFG:OKI DATA CORP;          *2
                   MDL:FX-046FAX;              *2
                   DES:OKI FX-046FAX;          *2
OPT-RAM   4M       OK                          *3
ISDN BOARD         OK
CPU-ROM   VERSION  aaaa
          HASH     OK   hhhh
CPU-RAM            OK
PROGRAM   VERSION  aaaa
          HASH     OK   hhhh
RAM       2M       OK
DPRAM     2K       OK
```

a: Alphabet and digit
h: Hexadecimal numeral
n: Digit

Protocol Dump

The printing image is as follows:

PROTOCOL DUMP P1

08/25/2000 19:00
ID=OKI TAKASAKI

DATA	TIME	S,R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT
04/19	14:49	00’07"	OKI SHIBAURA(6412)	TX-G4	02	OK 0000

Dch.

TX	SETUP CONN-ACK +Bch+ DISC REL-C
RX	STATUS SETUP-ACK CONN +Bch+ REL
TX	
RX	

Bch.

TX	SABM SQ CR TCR CSS CDCL CDS CDUI CDPB CDUI CDPB CDUI CDPB CDUI CDUI
RX	UA SF CC TCA RSSP RDCLP RDPBP RDPBP RDPBP
TX	CDE CQ DISC
RX	RDEP CF UA
TX	
RX	
TX	
RX	

COMMN MODE
T.90

COMMN SPEED
64 kbps

FLOW CONTROL PA RAM.
2048(SPS)/7(SWS)/2048(RPS)/7(RWS)

TID
081-0273242117 =OKITAKASAKI

SETUP
08 01 05 05 04 02 88 90 6C 02 00 80 70 0B 80 30 32 37 33 32 38 30 30 30 31 7C 03 88 90 A9 7D 02
91 A1 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

DISC
45 16

Protocol Dump P1 (G4)

PROTOCOL DUMP P2

```
CR/CN
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00

CA/CC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00

CQ/CI
00 00 00 00 00

RQ/RI
00 00 00 00 00

SQ/SI
00 00 00 00 00

TBR
 00

TCC
00

TCR
09 E0 00 00 00 01 00 C0 01 0B 00 00 00 00 00 00

TCA
09 D0 00 01 00 01 00 C0 01 0B 00 00 00 00 00 00

CSS
0D 6F 01 2A 0A 18 30 38 31 2D 3D 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 0B 0E
39 37 2D 30 38 2D 32 37 2D 31 34 2D 34 34 02 03 0E 01 01 08 01 01 C1 08 A4 06 80 01 02 81 01 00
E8 2F 00 01 79 00 E0 1C C1 10 50 61 6E 61 66 61 78 20 55 46 2D 42 38 30 20 20 C2 02 36 35 C4 04
30 30 30 30 E1 0B E0 06 C0 01 01 C1 01 01 C1 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

RSSP/RSSN
0E 69 01 2A 09 18 30 38 31 2D 3D 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 0B 0E
39 38 2D 30 36 2D 30 32 2D 31 33 3A 34 36 02 03 0E 01 01 08 01 01 C1 08 A4 06 80 01 02 81 01 00
E8 29 00 01 79 00 E0 16 C1 10 50 61 6E 61 66 61 78 20 55 46 2D 42 38 30 20 20 C2 02 36 35 E1 0B
E0 06 C0 01 01 C1 01 01 C1 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

CDCL
3D 58 12 01 3C C1 4D A4 4B 80 01 02 81 01 00 A2 3C A2 32 30 08 80 02 26 C0 81 02 36 CE 30 08 80
02 2F 6D 81 02 43 2C 30 08 80 02 2F 6C 81 02 43 2C 30 08 80 02 2E 23 81 02 41 25 30 08 80 02 36
CE 81 02 4D 80 A4 06 8B 01 04 8B 01 01 E4 05 E1 03 C0 01 01 E8 04 00 01 49 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

RDCLP
3E 40 C1 3E A4 3C 80 01 02 81 01 00 A2 25 A2 1E 30 08 80 02 26 C0 81 02 36 CE 30 08 80 02 2F 6C
81 02 43 2C 30 08 80 02 2F 6D 81 02 43 2C A4 03 8B 01 04 E4 0D E0 06 02 01 02 02 01 03 E1 03 C0
01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
CDS
2D 40 29 03 30 30 31 C1 39 A4 37 80 01 02 81 01 00 A2 28 A2 1E 30 08 80 02 26 C0 81 02 36 CE 30
08 80 02 2F 6D 81 02 43 2C 30 08 80 02 2F 6C 81 02 43 2C A4 06 8B 01 04 8B 01 01 E4 05 E1 03 C0
01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
CDUI
01 00 A2 03 02 01 00 A2 1B 02 01 02 31 16 A4 08 80 02 26 C0 81 02 36 CE A6 05 A1 03 82 01 01 E9
03 C0 01 00 A3 80 31 06 A2 04 80 02 06 C0 24 80 04 82 07 90 01 01 00 00 00 00 00 00 00 00 00 00
01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

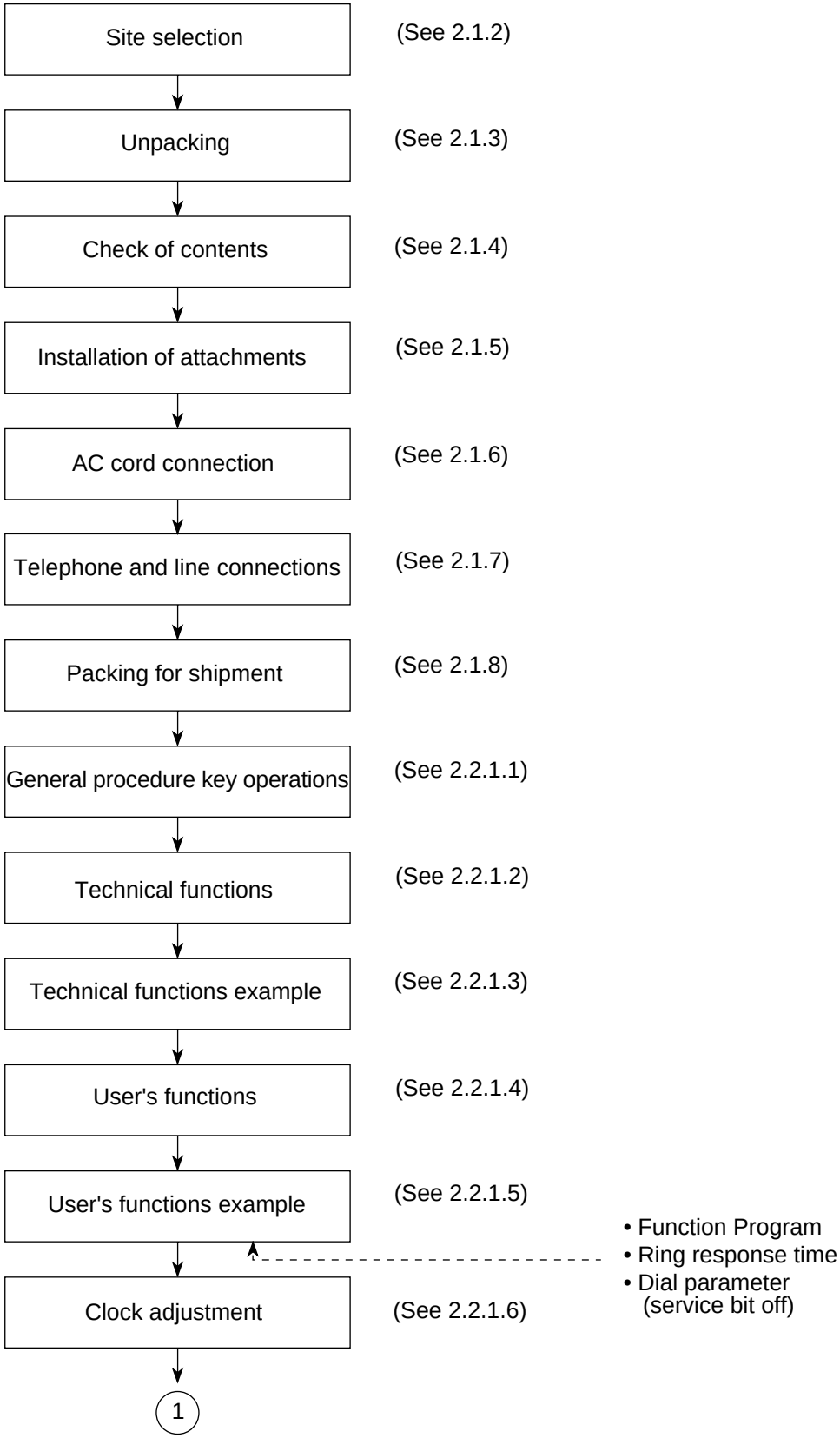
Protocol Dump P2 (G4)

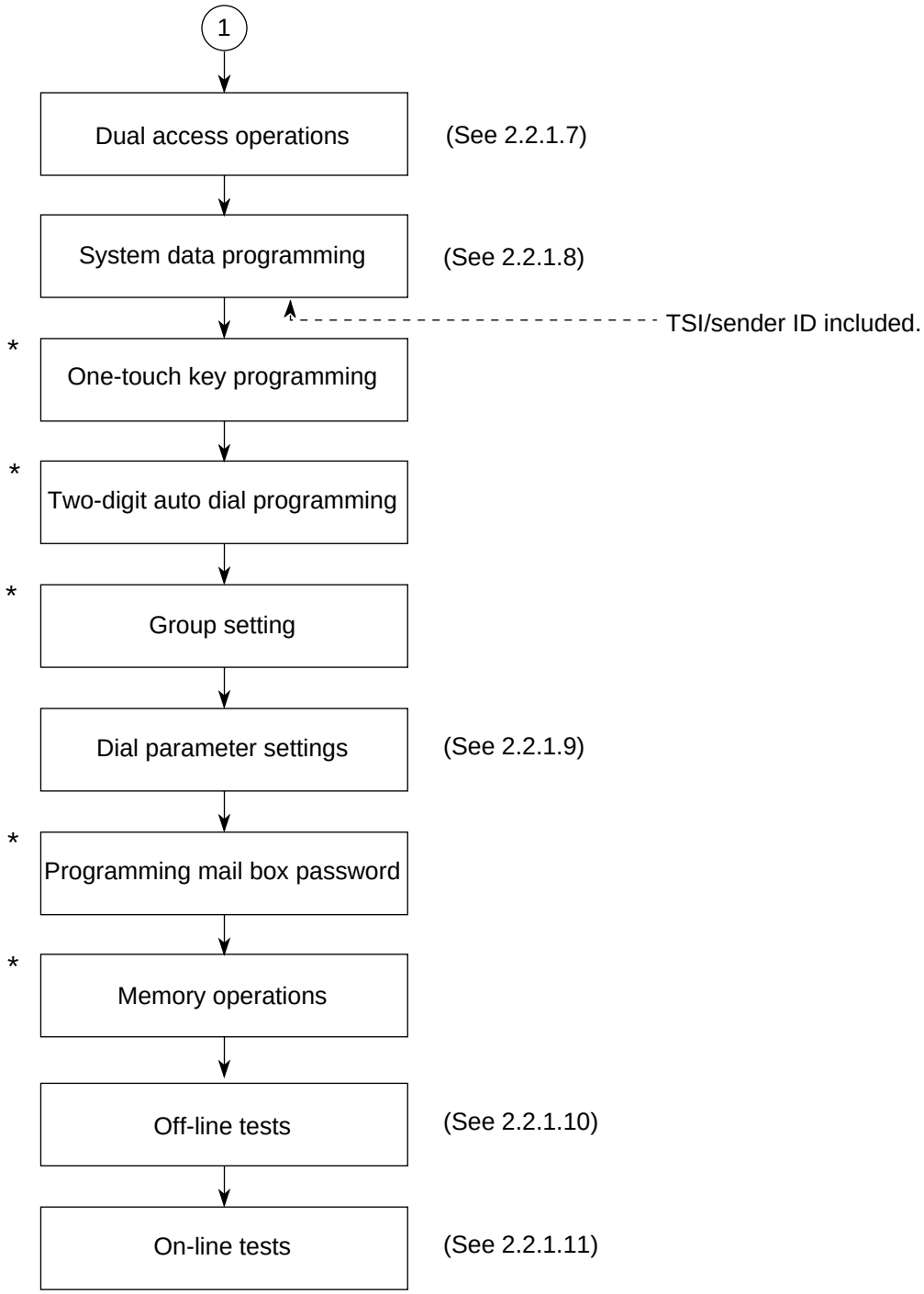
2. INSTALLATION PROCEDURE

2.1 Setup Information

2.1.1 General

The following flowchart outlines the installation procedure.





* : See user's guide

2.1.2 Site Selection

INSTALLATION

Precautions for Installation

(1) Fluctuation in line voltage
- 120VAC (102V to 127V)
- 230VAC (198V to 264V)

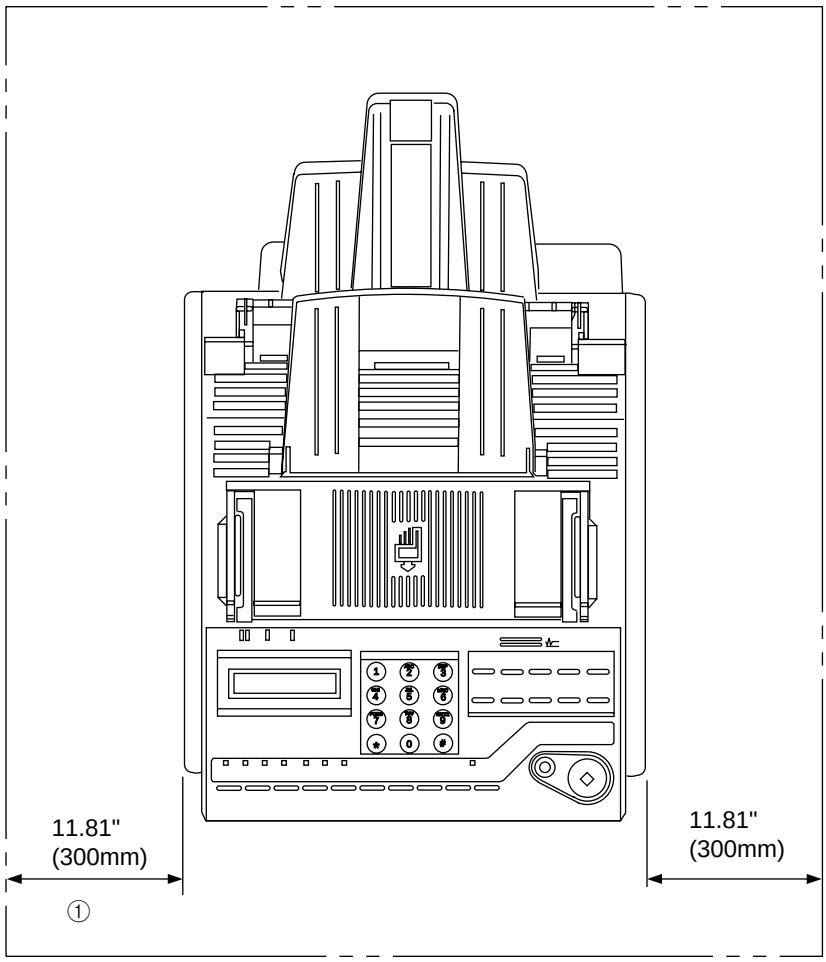
(2) Room temperature
50 to 90°F (10 to 32°C)

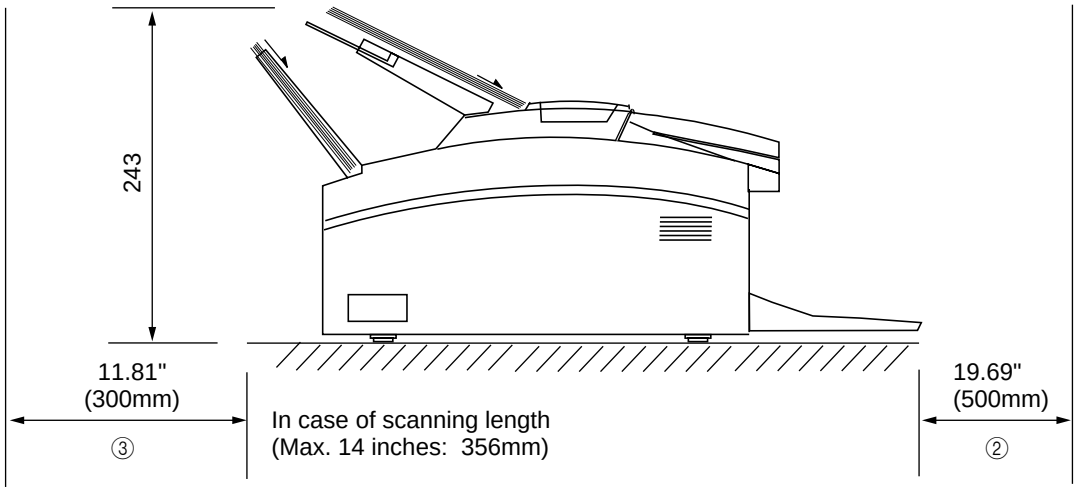
(3) Humidity
20 to 80% RH

(4) Operating environment
Pressure: Equivalent to altitude of 2500 m and below.

(5) Exposure
Within five minutes at luminous intensity 2,000 lux (with the stacker cover opened).

(6) Required space for installation
The facsimile requires the space as shown below for safety and good operability.





Note: ① This space is necessary for having the telephone set. (page 62)
② This space is necessary for installing the document stacker.
③ This space is necessary for ventilation.

(7) Levelness of installation surface
1 degree max.

(8) Other requirements
Avoid installing in any of the following places:
- A place exposed to direct sunlight
- A place near a heat source or exposed to vibration
- A dusty place
- A place in the atmosphere of acid gas, or steam etc.,
- A place exposed to quick temperature changes

2.1.3 Unpacking

Procedure

(1) Remove tape on the top of the carton box and open its cover.

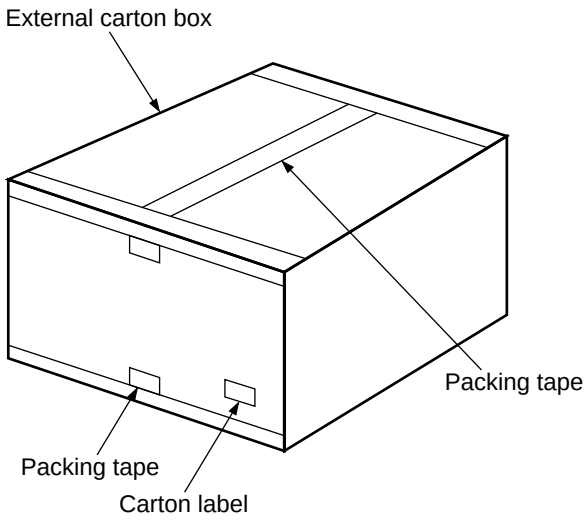


Figure 2.1 (1/2) Unpacking Procedure

(2) Take out the accessory box from the carton box.
(See Figure 2.1)

(3) Take out the machine with plastic wrapper from the box.

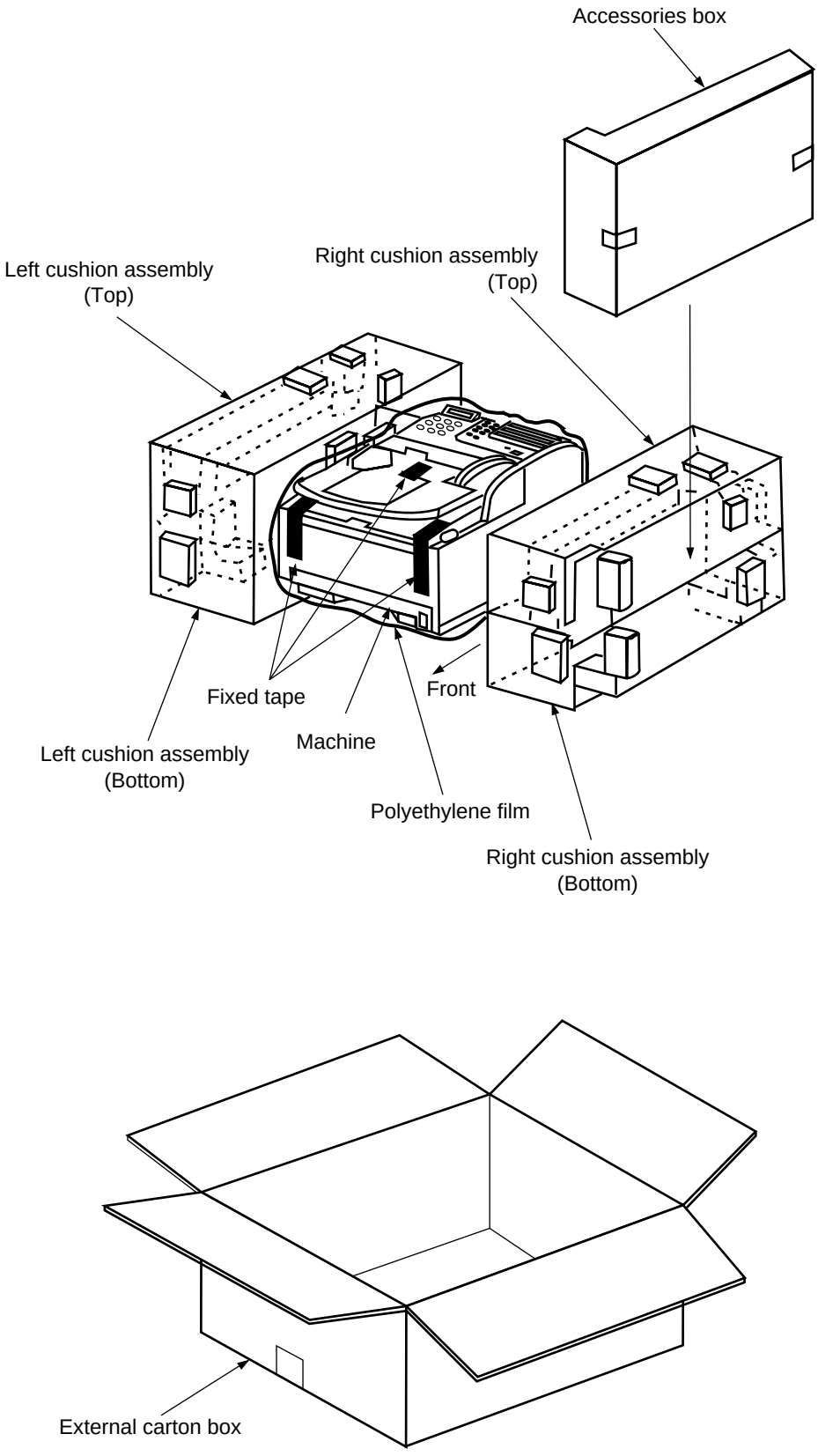


Figure 2.1 (2/2) Unpacking Procedure

2.1.4 Identification Contents

After having taken out the machine and accompanied accessories from the carton box, check the contents according to the following list:

Table 2.1 Contents List

Item No.	Name	Q'ty	Remarks
1	OKIFAX4550/ OKIOFFICE87	1	
2	AC power cord	1	
3	I/D unit	1	Already installed.
4	Toner cartridge	1	
5	Line cord	1	
6	One touch sheet	1	Already installed.
7	User's guide	1 vol.	
8	Tray paper	1	
9	Tray document	1	
10	Document stacker	1	

2.1.5 Installation of Attachments

(1) Items
- Image Drum (ID) Unit (already installed)
- Toner cartridge
- Recording paper
- Tray-paper, Tray-document and Document-stacker

(2) Procedure

1) Toner cartridge
- Peel off the fixed tape attached to the cover-top.
- Open the cover-top.

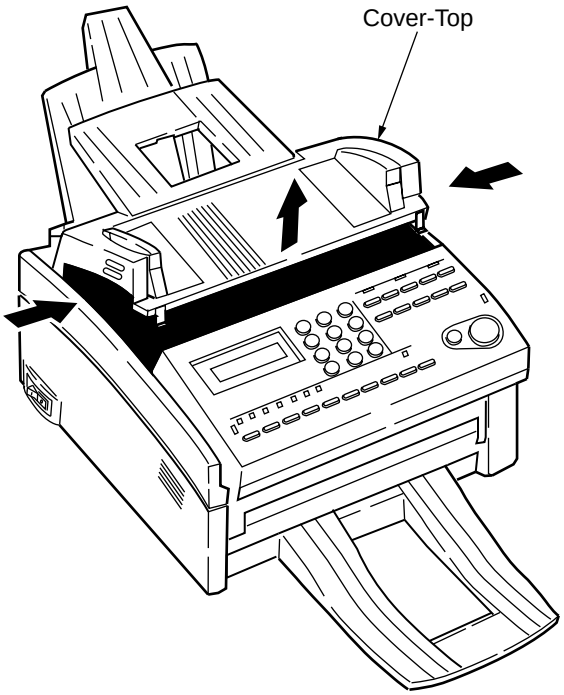


Figure 2.2 Toner Cartridge Installation (1)

- Take the plastic cover out of the ID unit.

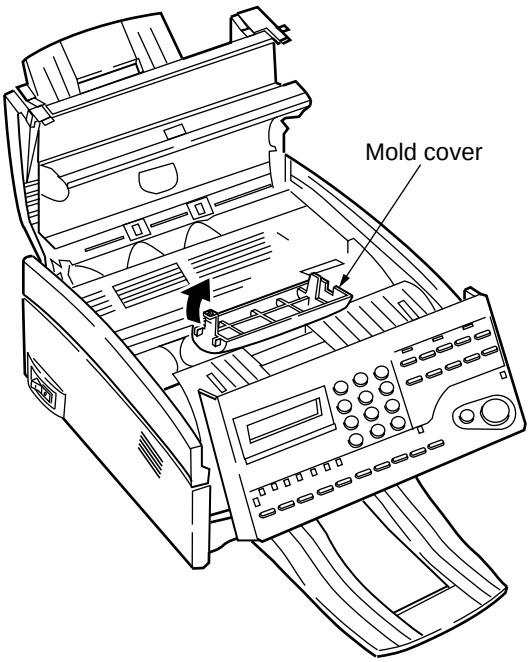


Figure 2.2 Toner Cartridge Installation (2)

• Take out the toner cartridge from the damp proof bag, shake it five or six times as shown in the illustration to eliminate the toner deflection, and peel off the seal gently.

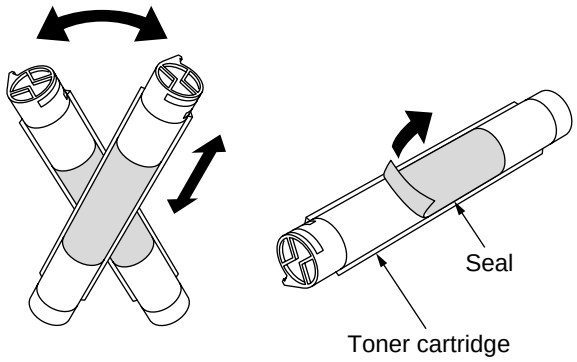


Figure 2.2 Toner Cartridge Installation (3)

- Ensure that the plastic tab on the right-hand side of the toner cartridge recess lines up with the groove on the toner cartridge.
- Press down on both ends to make sure the cartridge is fully seated.

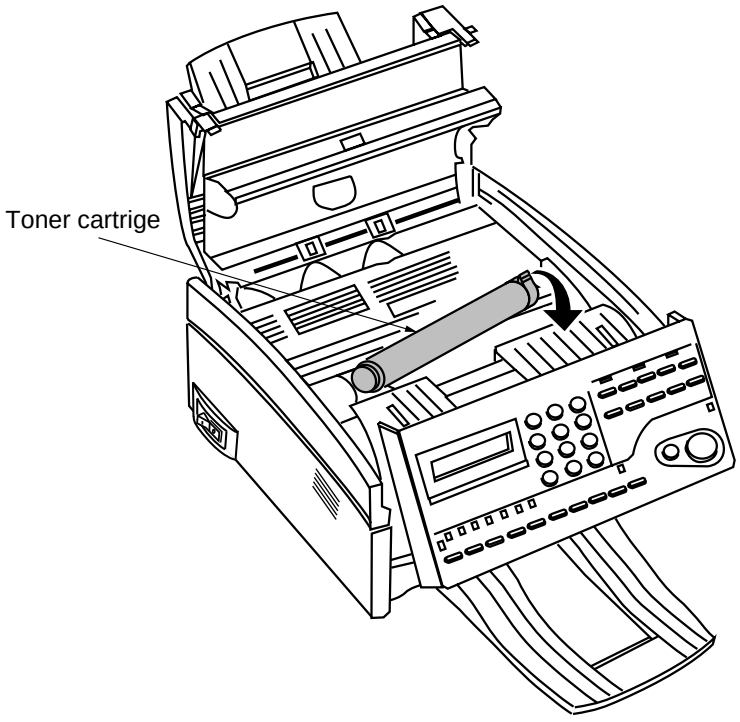


Figure 2.2 Toner Cartridge Installation (4)

• Push the gray tab forward until it stops.

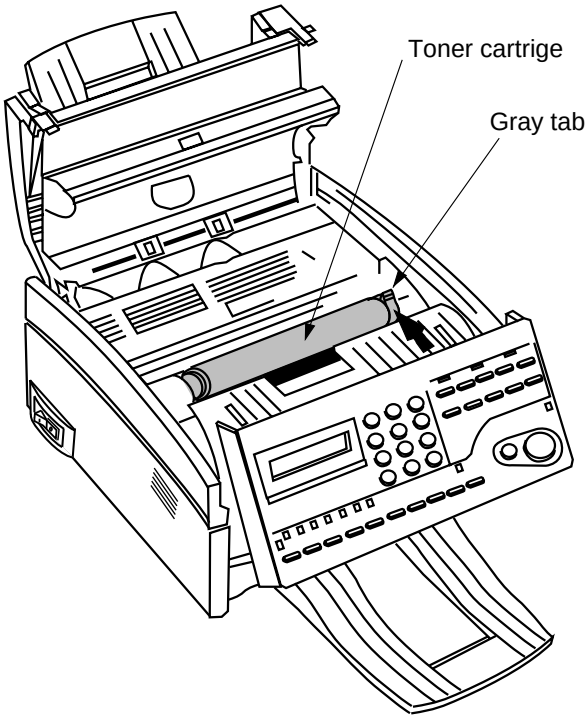


Figure 2.2 Toner Cartridge Installation (5)

• Clean the toner scattered in the vicinity of the toner cartridge using a cloth moistened with cold water. Do not use hot water since it makes the toner stick there.
• Close the cover assembly-top until the buttons have been locked completely.

(3) Recording paper

Note: About 100 sheets of the new paper can be set on the tray-paper.

Loading the new paper.
Sheets must not exceed 100 sheets of the new paper on the tray-paper. If excessive sheets are set, it will cause paper jams.

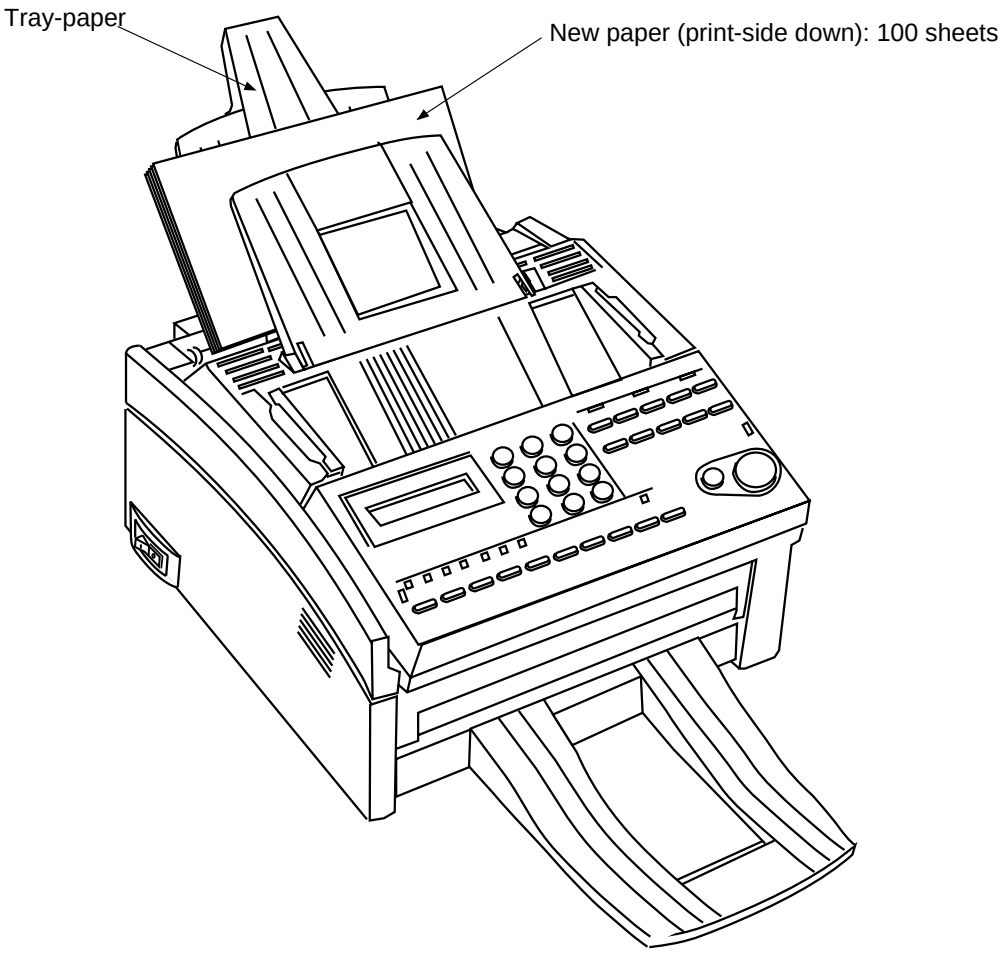


Figure 2.3 Recording Paper Cassette Installation

(4) Tray-paper, Tray-document and Document-stacker

• Hang the tray-paper, the tray-document and the stacker-document onto hanging position.

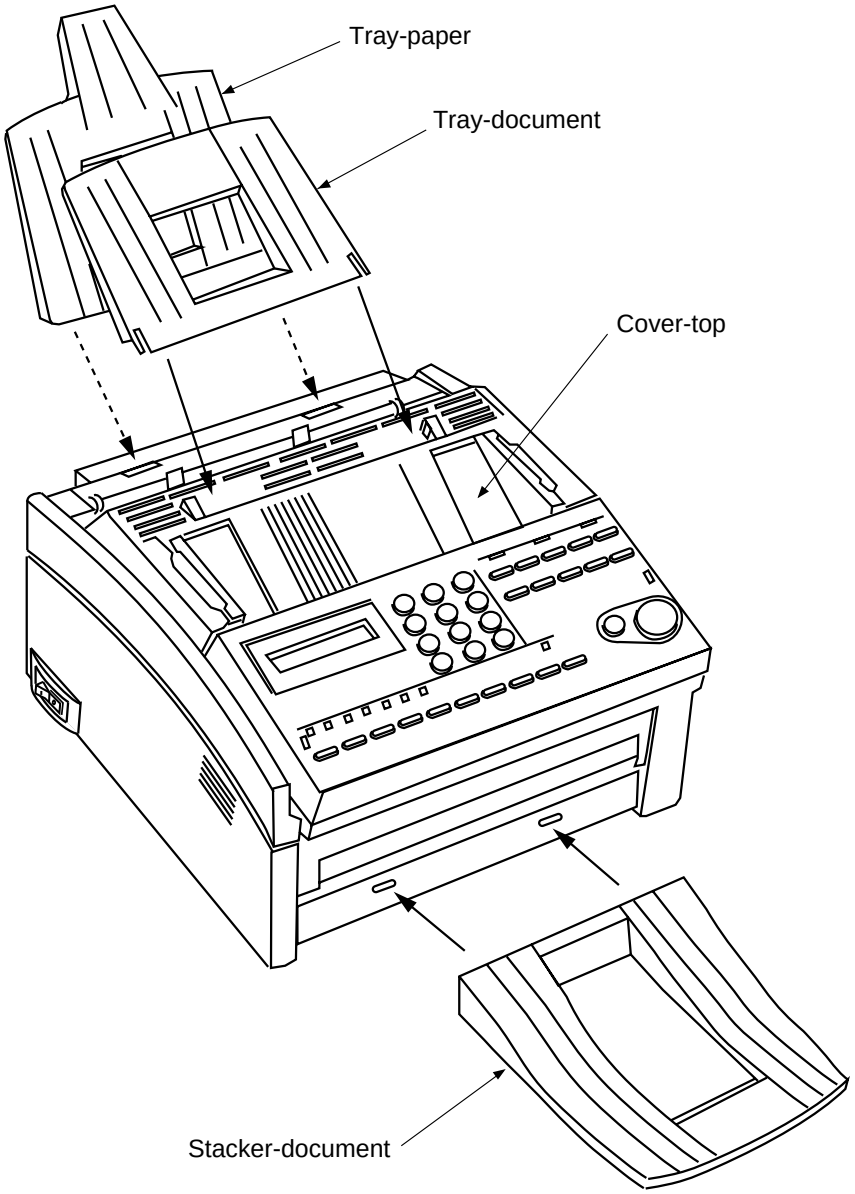


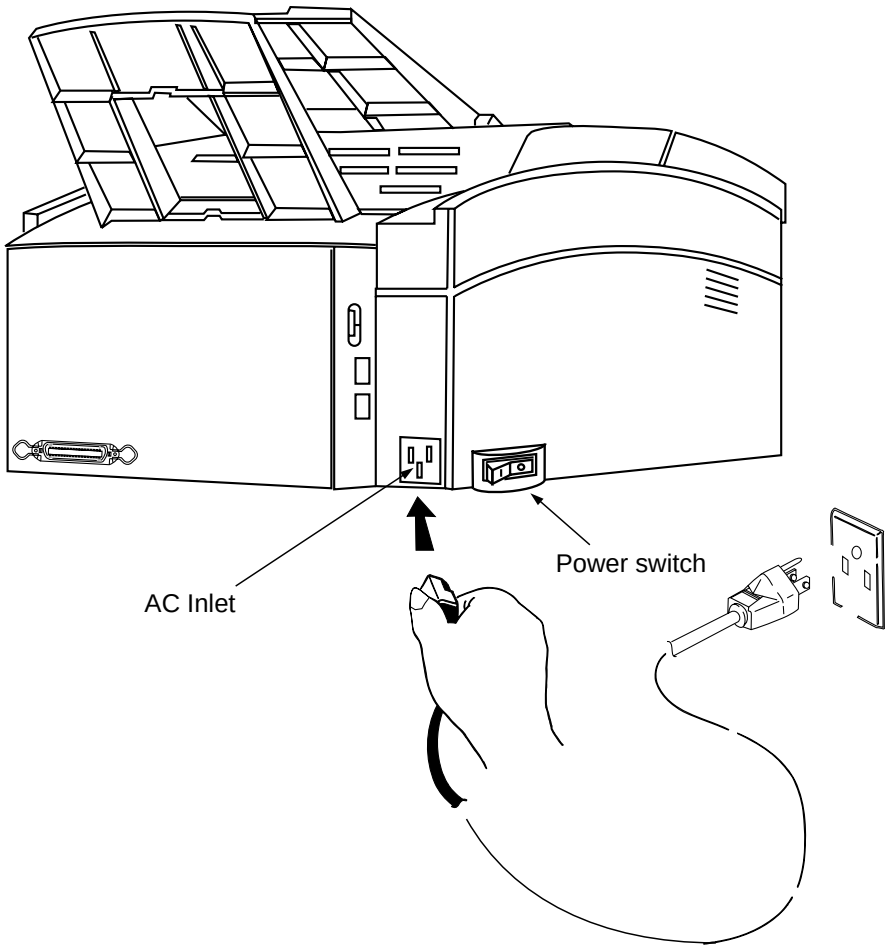
Figure 2.4 Document Stacker Installation

2.1.6 AC Cord Connection

The power supply is provided as follows.

Nominal input voltage 120VAC (Voltage range 102 to 127VAC)
Nominal input voltage 230VAC (Voltage range 198 to 250VAC)

Check whether the AC voltage of your input is within the above-mentioned voltage range and if so, check that the power switch is turned OFF. After turning off the power switch, connect the female plug of the AC cord to the machine and insert the male plug of the AC cord to the inlet receptacle.
Turn the power switch ON and check that the display shows “(Time)” message indicating the standby mode.



2.1.7 Telephone and Line Connections

(1) Procedure

• Connect the lines.

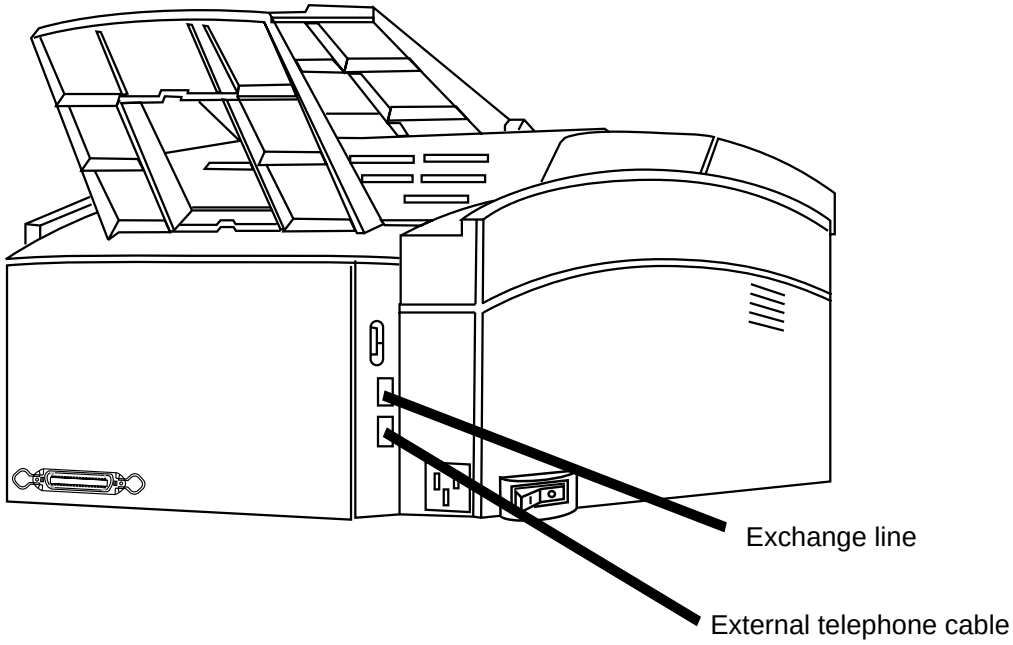


Figure 2.5 Telephone and Line Connections

2.1.8 Packing for Shipment

CAUTION: When packing the OKIFAX4550/OKIOFFICE87 series for shipment, REMOVE THE IMAGE DRUM AND TONER FROM THE UNIT AND SHIP SEPARATELY! Failure to do this will result in damage to the machine.

2.2 Programming and Initial Settings

2.2.1 Initial Settings

2.2.1.1 General Procedure of Key Operation

Figure 2.6 shows the general procedure of key operation.

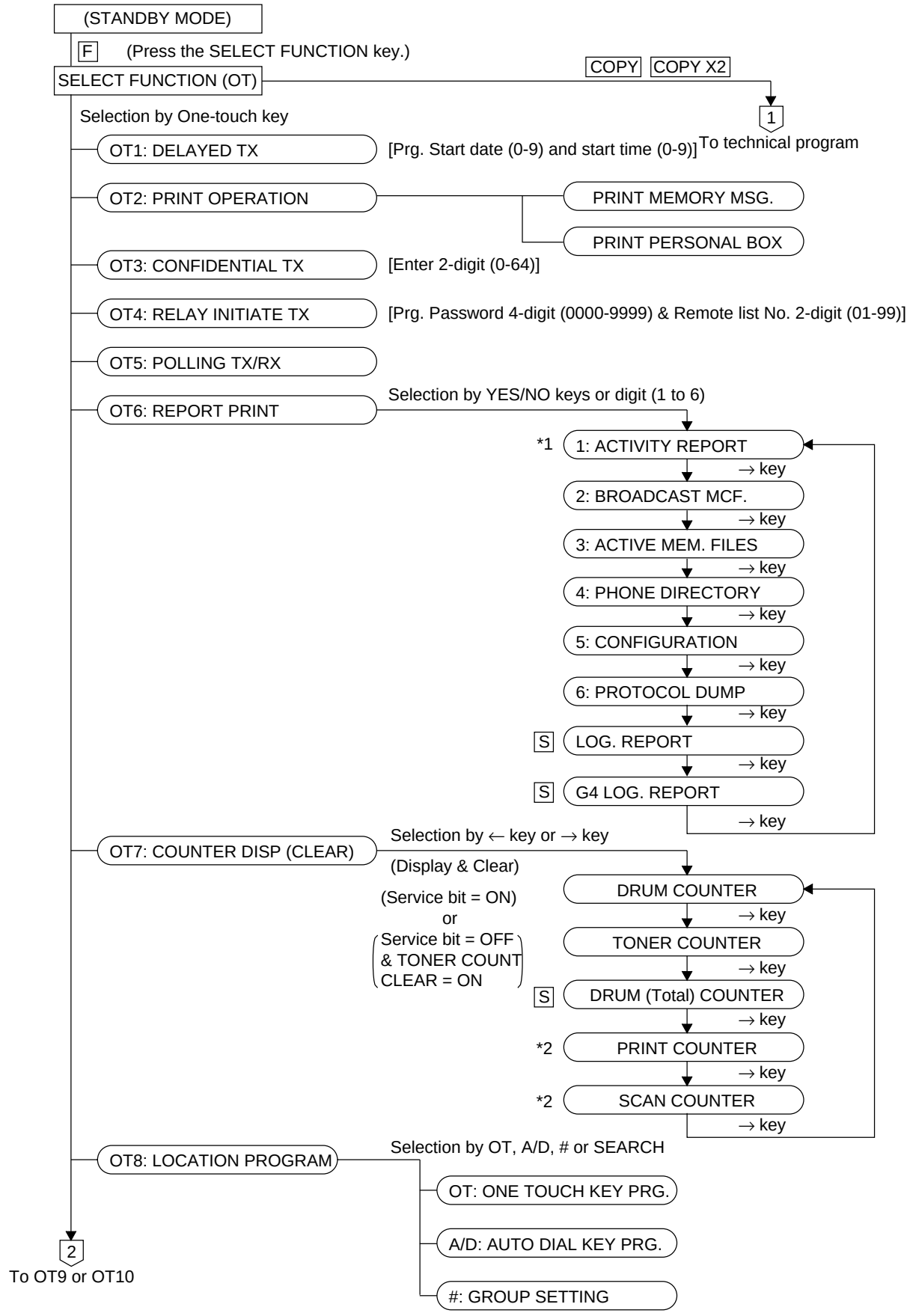


Figure 2.6 (1/3)

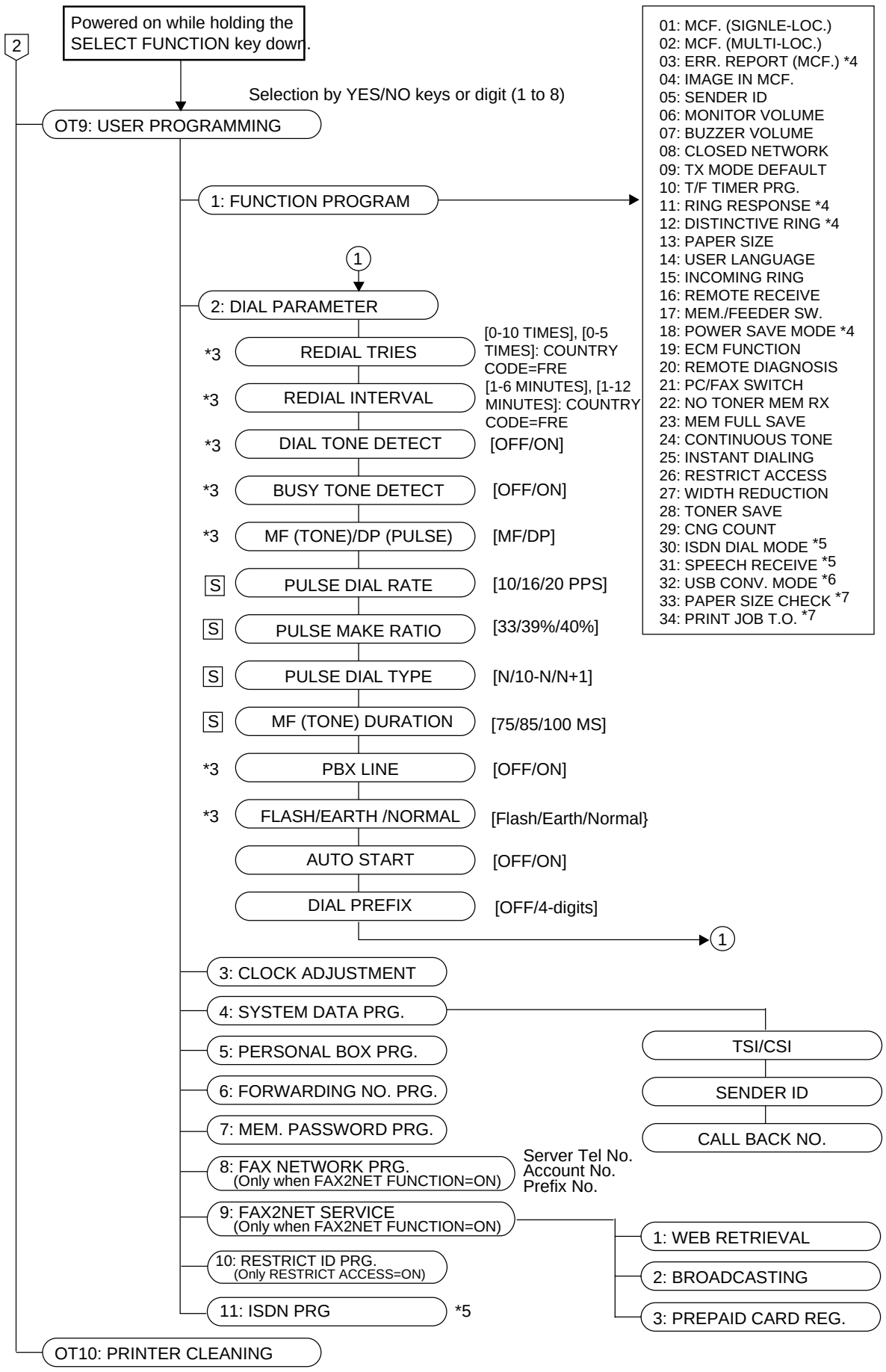

Powered on while holding the SELECT FUNCTION key down.
2
Selection by YES/NO keys or digit (1 to 8)
OT9: USER PROGRAMMING
1: FUNCTION PROGRAM
01: MCF. (SIGNLE-LOC.)
02: MCF. (MULTI-LOC.)
03: ERR. REPORT (MCF.) *4
04: IMAGE IN MCF.
05: SENDER ID
06: MONITOR VOLUME
07: BUZZER VOLUME
08: CLOSED NETWORK
09: TX MODE DEFAULT
10: T/F TIMER PRG.
11: RING RESPONSE *4
12: DISTINCTIVE RING *4
13: PAPER SIZE
14: USER LANGUAGE
15: INCOMING RING
16: REMOTE RECEIVE
17: MEM./FEEDER SW.
18: POWER SAVE MODE *4
19: ECM FUNCTION
20: REMOTE DIAGNOSIS
21: PC/FAX SWITCH
22: NO TONER MEM RX
23: MEM FULL SAVE
24: CONTINUOUS TONE
25: INSTANT DIALING
26: RESTRICT ACCESS
27: WIDTH REDUCTION
28: TONER SAVE
29: CNG COUNT
30: ISDN DIAL MODE *5
31: SPEECH RECEIVE *5
32: USB CONV. MODE *6
33: PAPER SIZE CHECK *7
34: PRINT JOB T.O. *7
1
2: DIAL PARAMETER
*3 REDIAL TRIES [0-10 TIMES], [0-5 TIMES]: COUNTRY CODE=FRE
*3 REDIAL INTERVAL [1-6 MINUTES], [1-12 MINUTES]: COUNTRY CODE=FRE
*3 DIAL TONE DETECT [OFF/ON]
*3 BUSY TONE DETECT [OFF/ON]
*3 MF (TONE)/DP (PULSE) [MF/DP]
S PULSE DIAL RATE [10/16/20 PPS]
S PULSE MAKE RATIO [33/39%/40%]
S PULSE DIAL TYPE [N/10-N/N+1]
S MF (TONE) DURATION [75/85/100 MS]
*3 PBX LINE [OFF/ON]
*3 FLASH/EARTH /NORMAL [Flash/Earth/Normal}
AUTO START [OFF/ON]
DIAL PREFIX [OFF/4-digits]
1
3: CLOCK ADJUSTMENT
4: SYSTEM DATA PRG.
TSI/CSI
SENDER ID
CALL BACK NO.
5: PERSONAL BOX PRG.
6: FORWARDING NO. PRG.
7: MEM. PASSWORD PRG.
8: FAX NETWORK PRG.
(Only when FAX2NET FUNCTION=ON)
Server Tel No.
Account No.
Prefix No.
9: FAX2NET SERVICE
(Only when FAX2NET FUNCTION=ON)
1: WEB RETRIEVAL
2: BROADCASTING
3: PREPAID CARD REG.
10: RESTRICT ID PRG.
(Only RESTRICT ACCESS=ON)
11: ISDN PRG *5
OT10: PRINTER CLEANING

Figure 2.6 (2/3)

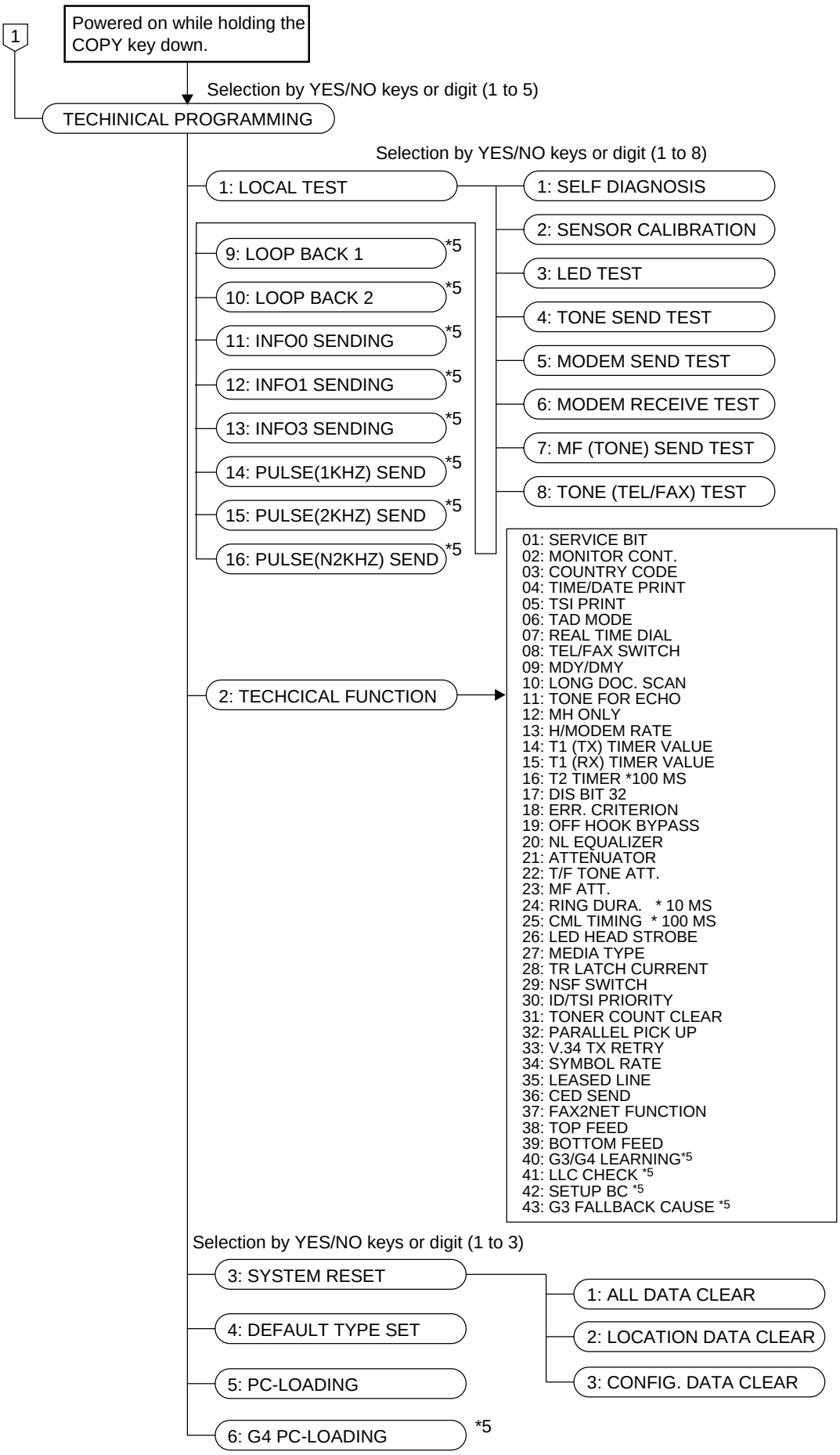

1
Powered on while holding the COPY key down.
Selection by YES/NO keys or digit (1 to 5)
TECHINICAL PROGRAMMING
Selection by YES/NO keys or digit (1 to 8)
1: LOCAL TEST
1: SELF DIAGNOSIS
2: SENSOR CALIBRATION
3: LED TEST
4: TONE SEND TEST
5: MODEM SEND TEST
6: MODEM RECEIVE TEST
7: MF (TONE) SEND TEST
8: TONE (TEL/FAX) TEST
9: LOOP BACK 1 *5
10: LOOP BACK 2 *5
11: INFO0 SENDING *5
12: INFO1 SENDING *5
13: INFO3 SENDING *5
14: PULSE(1KHZ) SEND *5
15: PULSE(2KHZ) SEND *5
16: PULSE(N2KHZ) SEND *5
2: TECHCICAL FUNCTION
01: SERVICE BIT
02: MONITOR CONT.
03: COUNTRY CODE
04: TIME/DATE PRINT
05: TSI PRINT
06: TAD MODE
07: REAL TIME DIAL
08: TEL/FAX SWITCH
09: MDY/DMY
10: LONG DOC. SCAN
11: TONE FOR ECHO
12: MH ONLY
13: H/MODEM RATE
14: T1 (TX) TIMER VALUE
15: T1 (RX) TIMER VALUE
16: T2 TIMER *100 MS
17: DIS BIT 32
18: ERR. CRITERION
19: OFF HOOK BYPASS
20: NL EQUALIZER
21: ATTENUATOR
22: T/F TONE ATT.
23: MF ATT.
24: RING DURA. * 10 MS
25: CML TIMING * 100 MS
26: LED HEAD STROBE
27: MEDIA TYPE
28: TR LATCH CURRENT
29: NSF SWITCH
30: ID/TSI PRIORITY
31: TONER COUNT CLEAR
32: PARALLEL PICK UP
33: V.34 TX RETRY
34: SYMBOL RATE
35: LEASED LINE
36: CED SEND
37: FAX2NET FUNCTION
38: TOP FEED
39: BOTTOM FEED
40: G3/G4 LEARNING*5
41: LLC CHECK *5
42: SETUP BC *5
43: G3 FALLBACK CAUSE *5
Selection by YES/NO keys or digit (1 to 3)
3: SYSTEM RESET
1: ALL DATA CLEAR
2: LOCATION DATA CLEAR
3: CONFIG. DATA CLEAR
4: DEFAULT TYPE SET
5: PC-LOADING
6: G4 PC-LOADING *5

Figure 2.6 (3/3)

Note: When the machine is in POWER SAVE MODE, the machine returns to standby mode by pressing the START key.

*1: In case of Germany, Austria and Switzerland version, ACTIVITY REPORT message does not appear on the LCD display.

*2: User can read no. of counter in LCD but can not clear.

*3: User can not select in some countries.

*4: When the service bit is set to OFF, ERR. REPORT (MCF.) of No. 03, RING RESPONSE of No. 11, DISTINCTIVE RING of No. 12 and POWER SAVE MODE of No. 18 are bypassed to the next function No. in some countries.

*5: Only when G4 opt. is installed.

*6: OKIOFFICE87 only.

*7: Only when USB CONV. MODE = ON.

S: Effective if the service bit is set to ON.

2.2.1.2 Technical Functions

This section explains setting items generally conducted by service personnel, not by users.

Table 2.2 shows the initial setting items and their purposes. (The default setting is different by the individual countries.)
Each item can be accessed by entering the corresponding service number on Technical Function.

The detailed procedures of the initial setting items will be explained on the following pages.

Note 1: S-ON: Effective if the service bit has been set to ON.
FP: Function program setting
TF: Technical function setting

2: The fonts displayed on the LCD operation panel may differ from fonts written this manual.

Table 2.2 (1/8) Service Personnel Initial Settings

T.F. No.	Item	Specifications	Default
01	Service bit	Switching serviceman/user operation. ON : Service personnel's features are available. OFF : Service personnel's features are not available. To enable or disable the following functions: • Drum (Total, Print, Scan), and toner counter clear • Dial parameters • etc	
02	Line monitor control	Changing the audible monitoring range. FP +06 (To select the loudness of monitoring) ON : Enable OFF : Disable ***Note:*** In case of transmission mode, the monitor will be available during dialling, but the monitor will be switched off automatically after the elapse of specified time (about 5 sec.). However, when TF02 is set to ON, the monitor is available during communication also.	
03	Country code	Selecting the following country code: USA, INT'L, GBR, IRL, NOR, SWE, FIN, DEN, GER, HUN, TCH, POL, SUI, AUT, BEL, HOL, FRE, POR, ESP, ITA, GRE, AUS, NZL, SIN, HNG, LTA, MEX, CHN, RUS	
04	Time and date print	Enables or disables the function of printing local date and time at the top of the received page. OFF/ONCE/ALL selectable. OFF: Time and date are not printed ONCE: Time and date are printed at the top of the first page only. ALL: Time and date are printed at the top of every page. ***Note:*** Set at receiver.	
05	TSI print	Switches the function of printing TSI data from remote fax onto the received pages. TSI is printed at the leading edge of first reproduced copy. (Set at receiver.) When TF04 is set to "ALL", TSI is printed for the all received pages. ON : Enable OFF : Disable (Reference) TSI; Transmitting Subscriber Identification	

Table 2.2 (2/8) Service Personnel Initial Settings

T.F. No.	Item	Specifications	Default
06	TAD mode (For external telephone answering device.)	Switches an automatic voice message response to the calling station. TAD mode is of three types (TYPE1/TYPE2/ TYPE3). OFF/TYPE1/TYPE2/TYPE3 selectable. TYPE1 means: 1. RING comes. 2. The TAD answers, returns the recorded voice message in TAD to calling party. 3. The FAX machine will continue to detect CNG signal while TAD works. 4. If the FAX machine detects CNG signal, the fax will go into normal receiving mode. 5. Even though the fax does not detect CNG signal, the fax will go to receiving mode in hook-on condition. TYPE2 means: The operations of No. 1 to No. 4 are the same as those of TYPE 1. 5. If the fax does not detect CNG signal during working of TAD, the machine will go to standby mode. TYPE3 means: The operations of No. 1 to No. 2 are the same as those of TYPE 1. 3. The fax does not detect CNG signal during 15 seconds from TAD operation starting. 4. The fax starts CNG detection after 15 seconds from TAD operation. If the CNG is detected, the fax goes to the normal receive mode. 5. If the fax does not detect the CNG during TAD operation, the fax goes to standby mode.	
07	Real time dialing	Enables or disables the real time dialling. 3 types selectable. (OFF/TYPE1/TYPE2) TYPE1: Real-time dialling is available when the telephone handset is OFF-HOOK. TYPE2: Real-time dialling is available when the telephone handset is OFF-HOOK or HOOK key is pressed.	
08	TEL/FAX switching	Enables or disables the TEL/FAX automatic switching. ON : Enable OFF : Disable (Related item: FP10, TF23)	

Table 2.2 (3/8) Service Personnel Initial Settings

<table>
<tr><th>T.F. No.</th><th>Item</th><th>Specifications</th><th>Default</th></tr>
<tr><td>09</td><td>MDY/DMY</td><td>Switches LCD display and report print from month/day/year to day/month/year or vice versa. MDY/DMY selectable.</td><td></td></tr>
<tr><td>10</td><td>Long document SCAN</td><td>Switches the function of transmitting long-size document (more than 360 mm).

ON : 1500 mm or 60 min.
OFF : 360 mm or 60 min.

Note: 60 min is transmitting time.</td><td></td></tr>
<tr><td>11</td><td>Tone for Echo</td><td>Switches the function to apply to poor lines with echo in overseas transmission, etc.

ON: Enables
OFF: Disables

<table><tr><td>Echo Protection</td><td>OFF</td><td>ON</td></tr><tr><td>Ignore 1st DIS</td><td>OFF</td><td>ON</td></tr><tr><td>CED-DIS timer</td><td>75 ms</td><td>1.5 sec</td></tr><tr><td>Tone for echo</td><td>OFF</td><td>ON</td></tr></table>
(TF-11 table)</td><td></td></tr>
<tr><td>12</td><td>MH only</td><td>Switches the function of limiting image compression to the MH codes only.

ON : Coding scheme is MH only. When the receiving image data is affected by noise on the telephone line.
OFF : Any of MH, MR and MMR.</td><td></td></tr>
<tr><td>13</td><td>High-speed modem rate</td><td>Specifies the modem’s starting speed, 33.6K, 28.8K, 14.4k, 9.6k, or 4.8kbps.</td><td></td></tr>
<tr><td>14</td><td>T1 (TX), timeout value</td><td>T1 (TX) is a time to detect up to 3 flags of DIS sent from a called fax machine.
Registers the time duration (in seconds) for which the fax waits for the remote station’s answer.
This timer starts when the last dialled digit has been sent in the automatic transmission mode.

* Selects the 3 digit timer
010 to 255 sec selectable.(in one second steps)</td><td></td></tr>
<tr><td>15</td><td>T1 (RX), timeout value</td><td>T1 (RX), timeout value (later)
Registers the time duration (in seconds) for which the fax waits for the remote station’s answer of individual country’s specification. This timer starts after the DIS is transmitted. If T1 times out, the fax disconnects the line.
* Selects the 3 digit timer
010 to 255 sec selectable. (in one second steps)</td><td></td></tr>
</table>

Table 2.2 (4/8) Service Personnel Initial Settings

T.F. No.	Item	Specifications	Default
16	T2, timeout value	T2, timeout value (layer) Registers the time duration (in seconds) for which the receiving fax detects the EOL (End Of Line) signal during phase C. The fax will disconnect the line when EOL cannot be detected within T2. * Selects the 3 digit timer 001 to 255 selectable. (in 100ms steps) For example: 060 × 100 ms =6 s	
17	DIS bit32	Selects whether a called fax should transmit DIS bit 32 or not. ON : Transmits DIS bit 32. OFF: Does not transmit DIS bit 32. (When OFF, the following fanctions will not be supported: • Reception of Extra Fine (8×15.4 line/mm) • 300 dpi • SEP/SUB frames ***Note:*** To improve compatibility between this fax machine and other company's fax machines. If communication error occurs frequently when a fax sender is an older version.	
18	Error criterion	Registers the threshould value whether to transmit RTN or MCF signal when the error occurs in received data. 00% to 99% selectable. (in one percent steps)	
19	Off-hook bypass	Switches the function of maintaining communication without hooking up the telephone set in normal testing etc. ON : Enable OFF: Disable	
20	NL equalizer	Selects equalization for the following cable lengths: 0 km/1.8 km/3.6 km/ 7.2 km selectable. ***Note:*** Relative to 1700Hz for length of 0.4mm diameter cable. Equalizer level is the difference of gain of equalized signal between 0.3kHz and 3.4kHz.	
21	Modem attenuator	Adjusts the attenuation (dB) for the message send signal power level. Adjusting value is 0 to 15 dB in one dB steps. Since the maximum send signal power level (dB) of the fax is at 0 dB, you can select 0 dB to -15 dB in one dB steps for the send signal power level.	

Table 2.2 (5/8) Service Personnel Initial Settings

T.F. No.	Item	Specifications	Default
		0 to 15 dB. selectable (except FRE) 7 to 15 dB, selectable (FRE) At country code = CHN, set the actual set value +2dB. ***Note:*** The send signal power level should meet your country's regulation. Some countries may specify the power level at a telephone exchange. In that case, you should substract the specified level from the line cable attenuation to determine the send level of your fax.	
22	T/F tone attenuator (for TEL/FAX SW)	Adjusts the attenuation (dB) for the quasi-ring back tone send signal of TEL/FAX switching. Adjusting value is 0 to 15 dB in one dB steps. At country code = CHN, set the actual set value +2dB.	
23	MF attenuator	Adjusts the attenuation (dB) for the send MF tone power level. Adjusting value is 0 to 15 dB in one dB steps. At country code = CHN, set the actual set value +2dB.	
24	Ring duration detection time	Selects the minimum ring detection time to meet country's requirements. Adjusting time is 100 MS to 990 MS in 10 MS steps. 10 to 99 selectable. For example: (120 ms) $\underline{12 \times 10 \text{ ms} = 120 \text{ ms}}$	
25	CML timing	Selects the time from end of ring to CML-ON. Adjusting time is 100 MS to 1900 MS in 100 MS steps. 0 to 19 selectable. For example: (300 ms) $\underline{03 \times 100 \text{ ms} = 300 \text{ ms}}$	
26	Strobe for LED head	Setting of LED print head strobe signals (00000-11111). Selection of strobe width in LED head. "00000" is lightest and "11111" is darkest. ***Note 1:*** When the rank marking of the new replaced LED print head (new part) is same as that of the old used LED print head (old part), you do not always have to set the LED print head strobe signal.	

Table 2.2 (6/8) Service Personnel Initial Settings

<table>
<tr><th>T.F. No.</th><th>Item</th><th>Specifications</th><th>Default</th></tr>
<tr><td></td><td></td><td>Note 2: Intensity ranking is determined by the first, second and third digits from the right on the LED print head serial number.
(i.e. in .... 212, 212 is the intensity ranking.)</td><td></td></tr>
<tr><td></td><td colspan="3">Setting of Technical Function No. 26
<table>
<tr><td rowspan="5">Setting / Rank Marking</td><td>MSB ↑</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td></td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>LSB ↓</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>291–313</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>269–290</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>248–268</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>229–247</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>212–228</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>196–211</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>181–195</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>168–180</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>155–167</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>143–154</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>132–142</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>122–131</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>113–121</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>105–112</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>100–104</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>27</td><td>Media type</td><td>Selects the recording paper according to its quality.
Medium, Medium-heavy and Heavy selectable.</td><td></td></tr>
<tr><td>28</td><td>Transfer roller latch current</td><td>Selects the latch current for transfer roller.
(–2/–1/0/+1/+2)</td><td></td></tr>
<tr><td>29</td><td>NSF switch</td><td>NSF signal transmission selectable.
ON: Transmits NSF signal
OFF: Disables NSF signal

Note: When NSF switch = OFF, the fax operation is shown as below.

• When transmitting, even if OKI NSF signal is detected from the remote machine, the fax transmits DCS signal (The fax does not transmit NSC signal.)

• When Remote Diag. = ON, the fax transmits NSF signal.</td><td></td></tr>
</table>

Table 2.2 (7/8) Service Personnel Initial Settings

<table>
<tr><th>T.F. No.</th><th>Item</th><th>Specifications</th><th>Default</th></tr>
<tr><td>30</td><td>ID/TSI priority</td><td>Selects ID/TSI printing in the distant station ID column of the report.
ID: Prints NSF signal with personal ID.
TSI: Prints TSI signal without NSF.

<table>
<tr><th rowspan="2">Priority</th><th colspan="2">Set to ID</th><th colspan="2">Set to TSI</th></tr>
<tr><th>TX</th><th>RX</th><th>TX</th><th>RX</th></tr>
<tr><td>1</td><td>Personal ID</td><td>Personal ID</td><td>CSI</td><td>TSI</td></tr>
<tr><td>2</td><td>CSI</td><td>TSI</td><td>Dial No.</td><td>Dial No.</td></tr>
<tr><td>3</td><td>Dial ID</td><td>Dial ID</td><td>Personal ID</td><td>Personal ID</td></tr>
<tr><td>4</td><td>Dial No.</td><td>Dial No.</td><td>-</td><td>-</td></tr>
</table>

Note: LCD display and Report printing gives preference to TSI/CSI signal than Personal ID.</td><td></td></tr>
<tr><td>31</td><td>Toner Count Clear</td><td>Enables or disables the clear operating of Toner Counter Clear (OT7) without Service bit ON/OFF (TF01).
ON: Enables
OFF: Disables</td><td></td></tr>
<tr><td>32</td><td>Parallel Pick Up</td><td>To control a receiving fax by 2 digits (the same digits as remote reception) from a telephone set connected parallel to the telephone line.
ON: To enable
OFF: To disable
(For the details, see Appendix A1, Section 4.3. Outline of Parallel Pick Up.)</td><td></td></tr>
<tr><td>33</td><td>V.34 TX Retray</td><td>Determine whether the V.34 communication error is to be remembered.
ON: Remembered
OFF: Not remembered</td><td></td></tr>
<tr><td>34</td><td>Symbol Rate</td><td>Set the V.34 modem symbol rate.
2400/2800/3200/3429 selectable.</td><td></td></tr>
<tr><td>35</td><td>Leased Line</td><td>Sets to leased line mode for China. When setting to this mode, CML, DP, and SR relays must be always set to ON. Sending on leased line is performed with document ON, no address designation and pressing of the START key.
Receiving on leased line is performed by answering automatically when detecting PIS or CNG.
ON: Leased line mode
OFF: No leased line mode</td><td></td></tr>
<tr><td>36</td><td>CED Send</td><td>Sets to send CED or not at the time of incoming call.
ON: Sending CED
OFF: Not sending CED</td><td></td></tr>
</table>

Table 2.2 (8/8) Service Personnel Initial Settings

T.F. No.	Item	Specifications	Default
37	Fax2Net Function	Set up whether to make Fax2Net service. ON: Enable OFF: Disable * The following Fax2Net service can use only when Fax2Net function is set to ON. Web Retrieval/Broadcasting/Prepaid Registration	
38	Top Feed	Adjusts read start position of various machines. -10 to +9 mm (in steps of 1 mm)	
39	Bottom Feed	Adjusts read end position of various machines. -2 to +10 mm (in steps of 1 mm)	
40	G3/G4 Learning	Sets up whether to learn G3/G4 communication. ON: Learn OFF: Not learn * Setting disabled if without ISDN option.	
41	LLC Check	Determine whether the lower layer compatibility information instracted from the calling side is analyzed. ON: Analyzed OFF: Not analyzed * The setting data must be transferred to the G4 board. * Cannot be selected when G4 option board is not installed.	
42	G3 Setup BC	Sets to send speech by BC of SETUP at making a G3I call as there exists an ISDN-PBX which accepts only the incoming call for speech purpose (BC=speech) Speech (for speech purpose) 3.1kHz (for communication Purpose)	
43	G3 Fallback Cause (54 kinds of service code)	Enables to select service code for automatic fallback to G3 transmission if G4 transmission is faulty. There are 54 kinds of service codes that can be selected. (Refer to G3 fallback service code list). The service code not selected is dealt with as communication error. Settings values: Setting enabled only when G4 opt. is mounted.	

Table 2.3 (1/2) Technical Default Setting

No.	Technical Setting Items	Setting Selection	1 ODA	2 LTA	3 E-INT	4 GER	5 E-FRE	6 0-AUS	7 0-NZL	8 0-SIN	9 0-HNG	10 L-AG	11 IRL	12 DEN	13 SWE	Note
1	SERVICE BIT	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
2	MONITOR CONT.	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
3	COUNTRY CODE	USA INT'L GBR IRL NOR SWE FIN DEN GER HUN TCH POL SUI AUT BEL HOL FRE POR ESP ITA GRE AUS NZL SIN HNG LTA MEX RUS	USA	LTA	GBR	GER	FRE	AUS	NZL	SIN	HNG	USA	IRL	DEN	SWE	
4	TIME/DATE PRINT	0: OFF/ 1: ONCE/2: ALL	OFF	OFF	OFF	ALL	OFF	OFF	ALL	ONCE	OFF	OFF	OFF	ONCE	ONCE	
5	TSI PRINT	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
6	TAD MODE	0: OFF/ 1: TYPE1/2: TYPE2/3: TYPE3	TYP2	TYP2	OFF	TYP1	TYP1	OFF	TYP1	OFF	OFF	TYP2	OFF	TYP2	TYP2	
7	REAL TIME DIAL	0: OFF/ 1: TYPE1/2: TYPE2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	By PTT Parameter
8	TEL/FAX SW	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
9	MDY/DMY	0: MDY/ 1: DMY	MDY	MDY	DMY	DMY	DMY	DMY	DMY	DMY	DMY	MDY	DMY	MDY	MDY	
10	LONG DOC. SCAN	ON/OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	
11	TONE FOR ECHO	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
12	MH ONLY	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
13	H/MODEM RATE	33.6K/28.8K/14.4K/9.6K/4.8K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	
14	T1(TX) TIMER VALUE	010 - 255 sec	59	59	60	60	140	30	40	60	30	59	60	60	60	By PTT Parameter
15	T1(RX) TIMER VALUE	010 - 255 sec	35	35	35	35	35	35	35	35	35	35	35	35	35	
16	T2 TIMER VALUE	001 - 255 (100ms - 25.5 sec)	130	130	130	60	51	130	130	130	130	130	130	130	130	Base Timer=100ms
17	DIS BIT 32	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
18	ERR. CRITERION	0 - 99	10	10	10	10	10	10	10	10	10	10	10	10	10	
19	OFF HOOK BYPASS	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
20	NL EQULIZER	0km/ 1.8km/3.6km/7.2km	0km	0km	0km	0km	0km	0km	0km	0km	0km	0km	0km	0km	0km	
21	ATTENUATOR	0 - 15dB	10dB	10dB	11dB	9dB	10dB	11dB	11dB	11dB	11dB	10dB	11dB	10dB	11dB	FRE = 7 - 15DB, CHN=+2DB
22	T/F TONE ATT	0 - 15dB	10dB	10dB	9dB	7dB	11dB	9dB	9dB	9dB	9dB	10dB	9dB	10dB	9dB	CHN=+2DB
23	MF. ATT	0 - 15dB	3dB	8dB	6dB	7dB	5dB	5dB	6dB	5dB	8dB	3dB	5dB	8dB	8dB	CHN=+2DB
24	RING DURA. *10MS	10 - 99 (*10 ms)	12	12	14	14	60	12	14	14	14	12	14	12	14	
25	CML TIMING *100MS	1 - 19 (*100 ms)	3	3	3	3	15	3	12	12	12	3	3	3	1	
26	HEAD STROBE	00000 - 11111	10100	10100	10100	10100	10100	10100	10100	10100	10100	10100	10100	10100	10100	
27	MEDIA TYPE	M/MH/H	M	M	M	M	M	M	M	M	M	M	M	M	M	
28	TR LATCH CURRENT	-2/-1/0/+1/+2	0	0	0	0	0	0	0	0	0	0	0	0	0	
29	NSF SWITCH	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
30	ID/TSI PRIORITY	ID/TSI	ID	ID	ID	TSI	ID	ID	ID	ID	ID	ID	ID	ID	ID	
31	TONER COUNT CLEAR	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
32	PARALLEL PICK UP	ON/OFF	ON	ON	ON	OFF	ON	ON	OFF	ON	ON	ON	ON	ON	ON	
33	V.34 TX RETRY	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
34	SYMBOL RATE	2400/2800/3200/3429	3429	3429	3429	3429	3429	3429	3429	3429	3429	3429	3429	3429	3429	
35	LEASED LINE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
36	CED SEND	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
37	FAX2NET FUNCTION	ON/OFF	OFF	OFF	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	
38	TOP FEED	Top: -10mm-+9mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	
39	BOTTOM FEED	Bottom: -2mm-+10mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	
40	G3/G4 LEARNING	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	Only ISDN opt. Installed
41	LLC CHECK	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Only ISDN opt. Installed
42	G3 SETUP BC	3.1K/SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	Only ISDN opt. Installed
43	G3 FALLBACK CAUSE	select from all 50 kinds of service codes	It doesn't have default data with each default type. Only one kind has data as a device.													Only ISDN opt. Installed

E-XXX=OEL-XXX, O-XXX=OKI-XXX, L-XXX=LANIER-XXX

Note: As for the setting of the part of mesh, Default-data does'nt exist in the Default-file. This setting has the data which are characteristic of the device.

Table 2.3 (2/2) Technical Default Setting

No.	Technical Setting Items	Setting Selection	14 NOR	15 SUI	16 AUT	17 HOL	18 ITA	19 ESP	20 CHN	(21) Factory	Note
1	SERVICE BIT	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	
2	MONITOR CONT.	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	
3	COUNTRY CODE	USA INT'L GBR IRL NOR SWE FIN DEN GER HUN TCH POL SUI AUT BEL HOL FRE POR ESP ITA GRE AUS NZL SIN HNG LTA MEX RUS	NOR	SUI	AUT	HOL	ITA	ESP	CHN	INT'L	
4	TIME/DATE PRINT	0: OFF/ 1: ONCE/2: ALL	OFF	ALL	ALL	ONCE	ALL	ONCE	OFF	ONCE	
5	TSI PRINT	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
6	TAD MODE	0: OFF/ 1: TYPE1/2: TYPE2/3: TYPE3	OFF	TYP1	TYP1	TYP1	OFF	TYP2	TYP2	OFF	
7	REAL TIME DIAL	0: OFF/ 1: TYPE1/2: TYPE2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	TYP2	By PTT Parameter
8	TEL/FAX SW	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
9	MDY/DMY	0: MDY/ 1: DMY	DMY	MDY	DMY	DMY	DMY	DMY	MDY	DMY	
10	LONG DOC. SCAN	ON/OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	
11	TONE FOR ECHO	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
12	MH ONLY	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
13	H/MODEM RATE	33.6K/28.8K/14.4K/9.6K/4.8K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	33.6K	
14	T1(TX) TIMER VALUE	010 - 255 sec	60	60	60	60	40	45	45	60	By PTT Parameter
15	T1(RX) TIMER VALUE	010 - 255 sec	35	35	35	35	35	35	35	35	
16	T2 TIMER VALUE	001 - 255 (100ms - 25.5 sec)	130	60	60	130	130	51	130	130	Base Timer=100ms
17	DIS BIT 32	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
18	ERR. CRITERION	0 - 99	10	10	10	10	10	10	10	10	
19	OFF HOOK BYPASS	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	
20	NL EQULIZER	0km/ 1.8km/3.6km/7.2km	0Km	0km	0km	0km	0km	0km	0km	0km	
21	ATTENUATOR	0 - 15dB	10dB	9dB	9dB	11dB	8dB	11dB	9dB	10dB	FRE = 7 - 15DB, CHN=+2DB
22	T/F TONE ATT	0 - 15dB	9dB	7dB	7dB	10dB	12dB	10dB	8dB	10dB	CHN=+2DB
23	MF. ATT	0 - 15dB	8dB	1dB	4dB	8dB	4dB	5dB	4dB	8dB	CHN=+2DB
24	RING DURA. *10MS	10 - 99 (*10 ms)	14	14	11	14	14	14	12	12	
25	CML TIMING *100MS	1 - 19 (*100 ms)	3	3	3	11	3	3	3	3	
26	HEAD STROBE	00000 - 11111	10100	10100	10100	10100	10100	10100	10100	10100	
27	MEDIA TYPE	M/MH/H	M	M	M	M	M	M	M	M	
28	TR LATCH CURRENT	-2/-1/0/+1/+2	0	0	0	0	0	0	0	0	
29	NSF SWITCH	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
30	ID/TSI PRIORITY	ID/TSI	ID	TSI	TSI	ID	ID	ID	ID	ID	
31	TONER COUNT CLEAR	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
32	PARALLEL PICK UP	ON/OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	ON	
33	V.34 TX RETRY	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
34	SYMBOL RATE	2400/2800/3200/3429	3429	3429	3429	3429	3429	3429	3429	3429	
35	LEASED LINE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
36	CED SEND	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
37	FAX2NET FUNCTION	ON/OFF	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	
38	TOP FEED	-10mm-+10mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	
39	BOTTOM FEED	-10mm-+10mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	0mm	
40	G3/G4 LEARNING	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	Only ISDN opt. Installed
41	LLC CHECK	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Only ISDN opt. Installed
42	G3 SETUP BC	3.1K/SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	Only ISDN opt. Installed
43	G3 FALLBACK CAUSE	select from all 50 kinds of service codes	It doesn't have default data with each default type. Only one kind has data as a device.								Only ISDN opt. Installed

E-XXX=OEL-XXX, O-XXX=OKI-XXX, L-XXX=LANIER-XXX

Note: As for the setting of the part of mesh, Default-data does'nt exist in the Default-file. This setting has the data which are characteristic of the device.

1) TEL/FAX automatic switching

This function is used for the purpose of TEL/FAX automatic switching as follows.

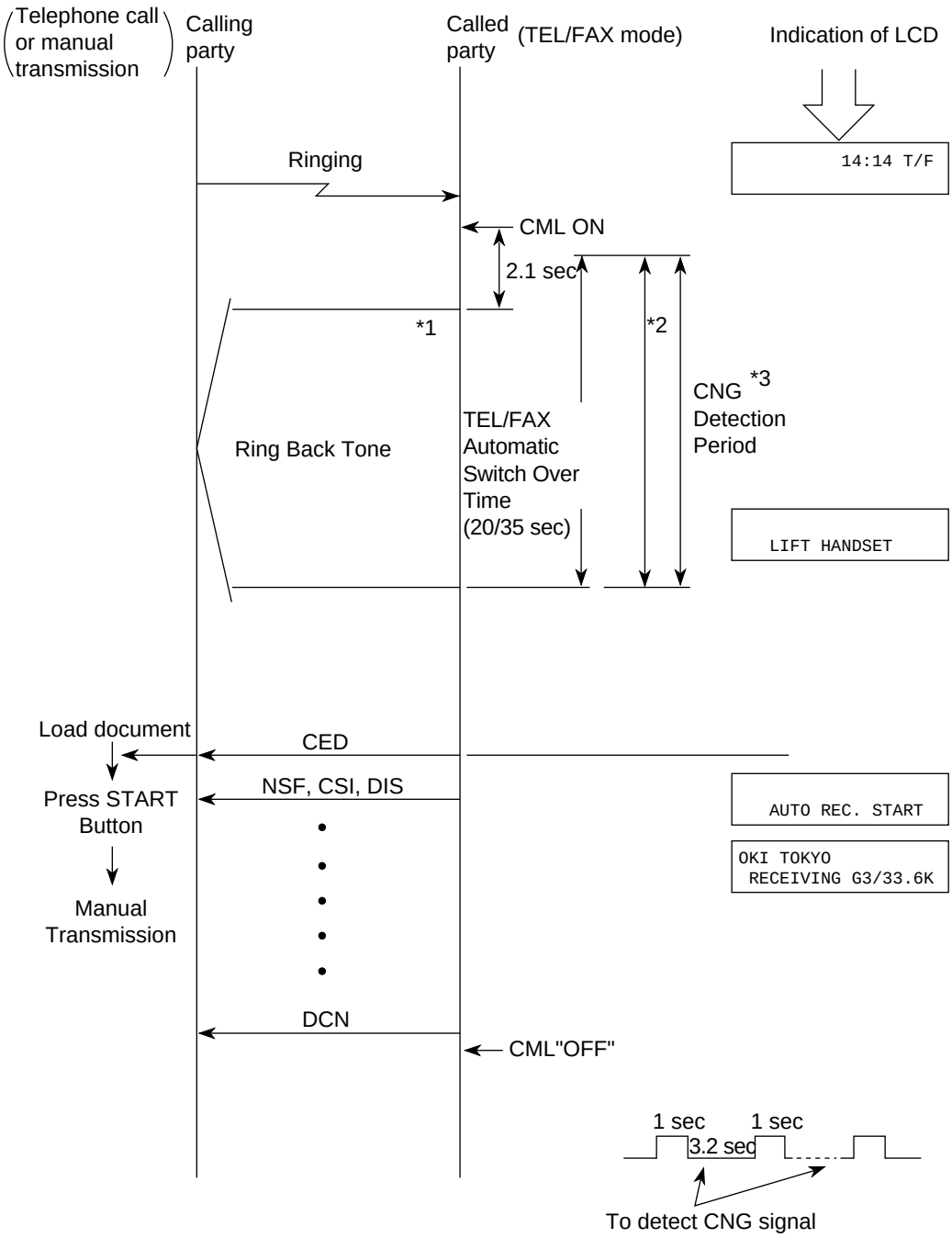
(1) If the machine detects a call with a CNG signal indicating an auto send facsimile call, it starts an automatic document receiving operation.

(2) If machine detects a call without a CNG signal, machine generates the buzzer sounds as a telephone call. The calling person can hear a “ring back” tone within a predetermined time.

If the operator at the called side does not lift the handset within the predetermined time, the machine automatically starts a document receiving operation.
Voice conversation will automatically be available through the internal handset by lifting up the handset while the call buzzer is sounding.

Note 1: The predetermined time is selectable between 20 or 35 sec.
(Function program No. 10)
2: No ringing signal is sent to the external telephone handset.
3: Choice of message sending level. The level is selectable from 0 to 15 dB in one dB step.
(Technical function No. 22)
4: TEL/FAX mode is available by Technical Function No. 08.

• TEL/FAX mode flow chart



Note ****1:*** Ring Back Tone — 1 sec. ON, 3.2 sec. OFF
****2:*** When you want to talk by phone, pick up handset.
****3:*** The called party can send CED to the calling party immediately to start FAX communication if the CNG is detected during the period.
****4:*** If the fax does not detect CNG signal during working of TEL/FAX mode, LCD display indicates “LIFT HANDSET”.

2) TAD mode

TAD: Telephone Answering Device

TAD can be connected to external telephone terminal to record your messages.

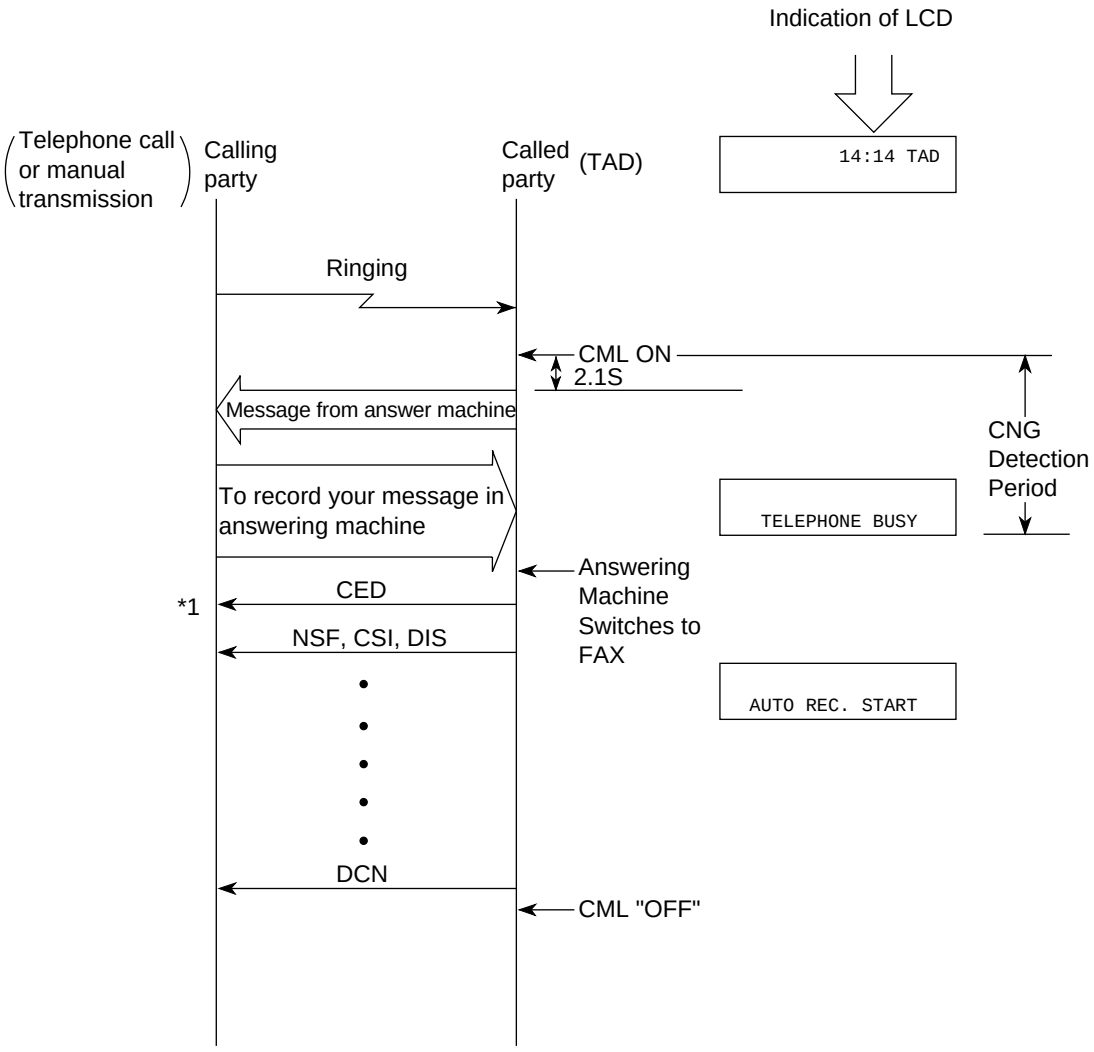
TAD records your speech and switches an automatic voice message response to the calling station.

Note 1: A choice of TAD mode is available by Technical Function No. 06.
2: The predetermined time is selectable between 20 or 35 sec.

• TAD mode flow chart

In case of TYPE 1;

Even though the fax does not detect CNG signal, the fax will go to receiving mode.



****1:*** To enable the manual TX mode.
Load document → Press START button → Manual transmission

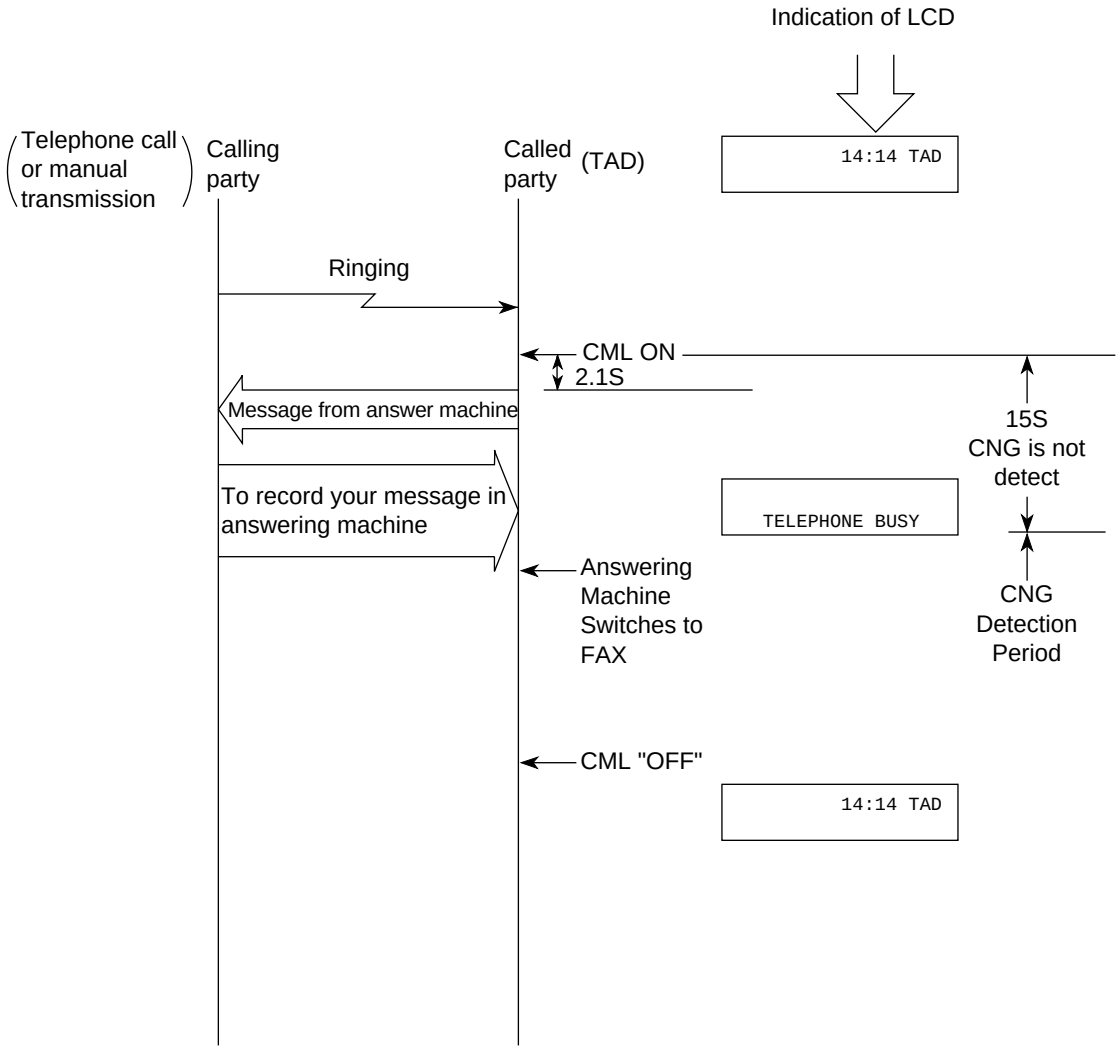
• TAD mode flow chart

In case of TYPE 2:

If the fax does not detect CNG signal during working of TAD, the machine will go to standby mode.

In case of TYPE 3:

The fax does not detect CNG signal during 15 seconds from TAD operation starting. The fax starts CNG signal detection after 15 seconds from TAD operation.
When the fax does not detect CNG signal and ends TAD operation (on-hook of TAD operation), the fax return to standby state.



2.2.1.3 Technical Functions Example

Note: The fonts displayed on the LCD operation panel may differ from the fonts written this manual.

(1) Service Bit Setting

1) Purpose
To enable or disable the following functions:
- Drum and toner counter display (clear)
- Service default report printing
- Protocol dump report printing
- Ring response time setting
- Dial parameters setting
- Printer counters clearing

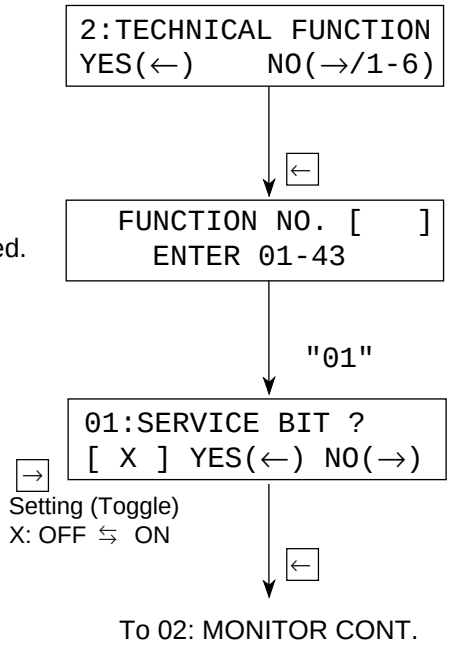
2) Procedure

Operations: **The display shows:**

- To bring the LCD up to the desired message press SELECT FUNCTION key once, COPY key twice and "2"key. (In case of no message in memory)

- Press [←] key.
  * "Enter 01 - 39" when G4 option is not installed.

- Service bit setting is T.F. No. 01.
  Enter "01"



Reference: See Figure 2.6 on the next page for the general operation flow.

(2) Technical functions

Operations:

- Press SELECT FUNCTION key.
- Press COPY key twice.
- Press ← key.
- Press → key.
- Press ← key.
- Enter two-digit function number, then the display will show the set item corresponding to the number entered. If you want to set up all or several items starting with 01, then enter 01.

The display shows:

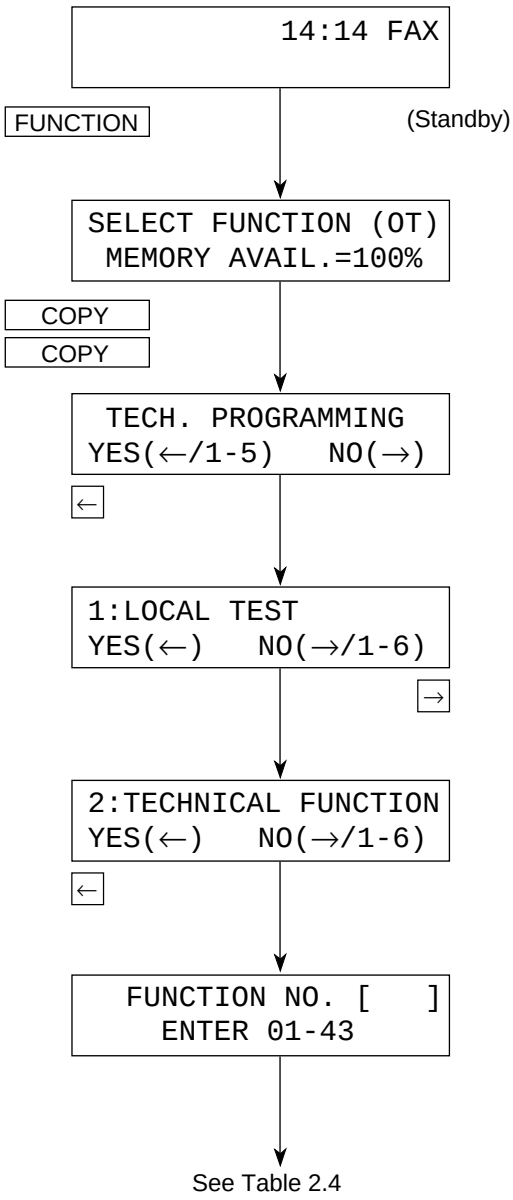


Table 2.4 (1/6) Technial Functions

T.F. No.	Name of Function	The Display Shows
01	Service bit	01:SERVICE BIT [X] YES(←) NO(→) [→] Setting (Toggle) X: OFF ⇆ ON
02	Line monitor control	02:MONITOR CONT. [X] YES(←) NO(→) [→] Setting (Toggle) X: OFF ⇆ ON
03	Country code	03:COUNTRY CODE [X] YES(←) NO(→) [→] Setting X: USA→ INT → ¥¥¥¥¥RUS
04	Time and date print	04:TIME/DATE PRINT [X] YES(←) NO(→) [→] Setting X: OFF→ ONCE→ →ALL
05	TSI print	05:TSI PRINT [X] YES(←) NO(→) [→] Setting (Toggle) X: OFF ⇆ ON
06	TAD mode (For external telephone answering device.)	06:TAD MODE [X] YES(←) NO(→) [→] Setting X: OFF→ TYPE1→ →TYPE2→TYPE3
07	Real-time dialling	07:REAL TIME DIAL [X] YES(←) NO(→) [→] Setting X: OFF→ TYPE1→ →TYPE2
08	TEL/FAX switching	08:TEL/FAX SWITCH [X] YES(←) NO(→) [→] Setting (Toggle) X: OFF ⇆ ON
09	MDY/DMY format	09:MDY/DMY [X] YES(←) NO(→) [→] Setting (Toggle) X: MDY ⇆ DMY
10	Long document transmission	10:LONG DOC. SCAN [X] YES(←) NO(→) [→] Setting (Toggle) X: OFF ⇆ ON

Table 2.4 (2/6) Technial Functions

T.F. No.	Name of Function	The Display Shows
11	Tone for echo (echo protection)	11:TONE FOR ECHO [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
12	MH only	12:MH ONLY [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
13	High-speed modem rate	13:H/MODEM RATE [X] YES(←) NO(→) → Setting X: 4.8k→ 9.6k → →14.4k →28.8k →33.6k
14	T1 (TX), timeout value (XTTO value)	14:T1(TX)TIMER VALUE [X] YES(←) NO(→) ← To 15 T1(RX) TIMER VALUE X: 010 - 255 sec → 14:T1(TX)TIMER VALUE [_] ENTER 010-255 3-digit timer entered. 14:T1(TX)TIMER VALUE [060] YES(←) NO(→) → (Example)
15	T1 (RX), timeout value	15:T1(RX)TIMER VALUE [X] YES(←) NO(→) ← To 16: T2 TIMER VALUE X: 010 - 255 sec → 15:T1(RX)TIMER VALUE [_] ENTER 010-255 3-digit timer entered. 15:T1(RX)TIMER VALUE [035] YES(←) NO(→) → (Example)

Table 2.4 (3/6) Technial Functions

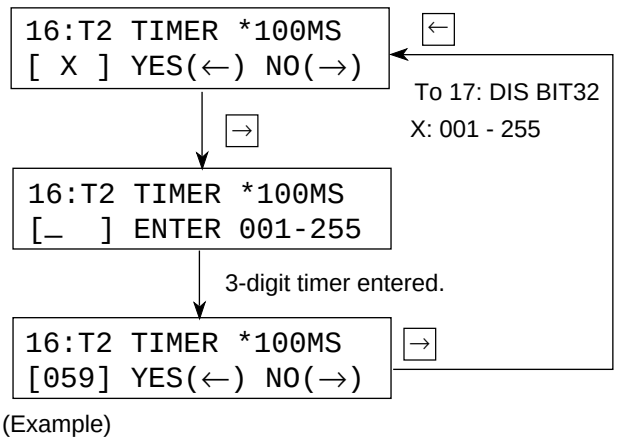
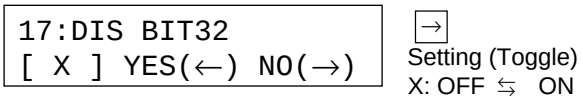
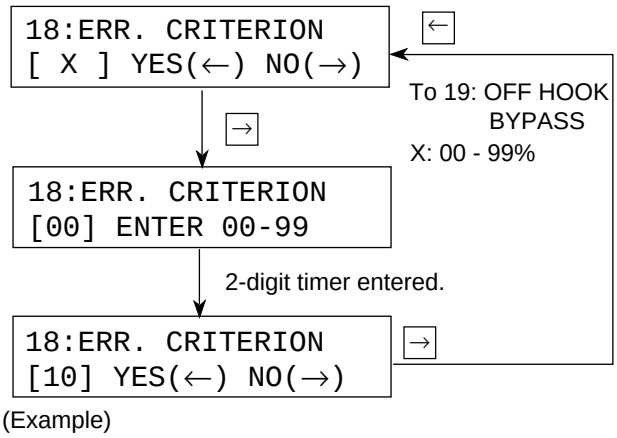
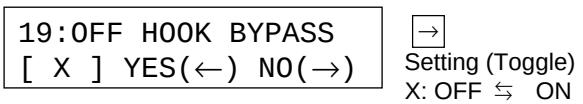
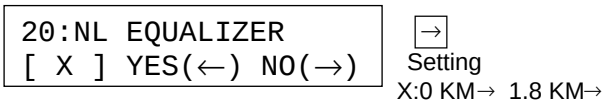
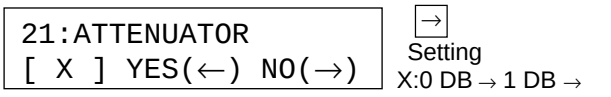
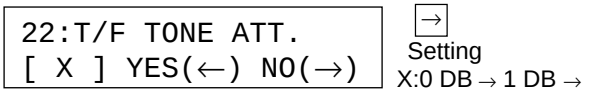
T.F. No.	Name of Function	The Display Shows
16	T2, timeout value	 (Example)
17	DIS bit 32	
18	Error criterion	 (Example)
19	Off-hook bypass	
20	NL equalizer	
21	Modem attenuator	
22	T/F tone attenuator (for TEL/FAX switch)	

Table 2.4 (4/6) Technial Functions

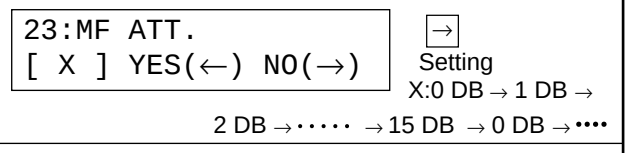
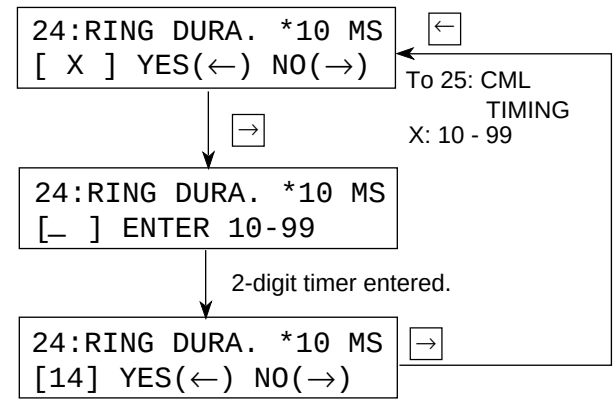
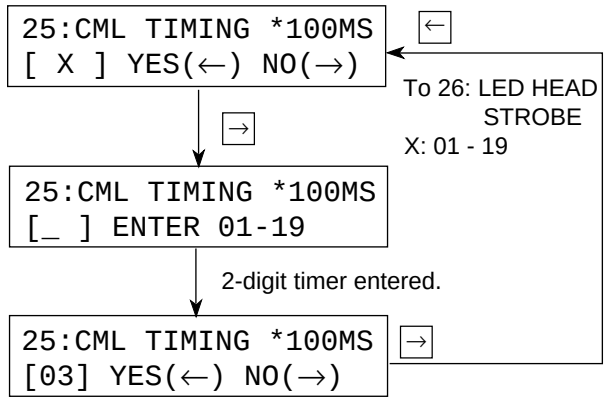
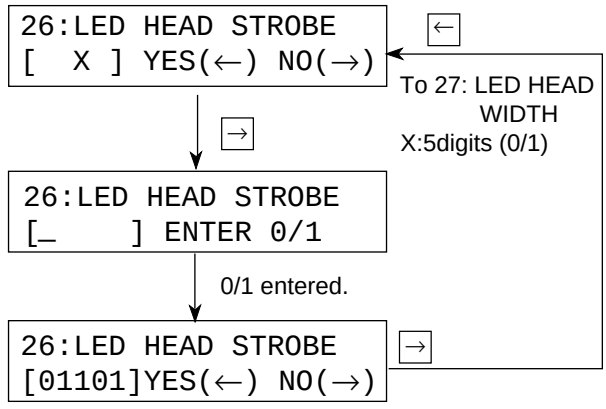
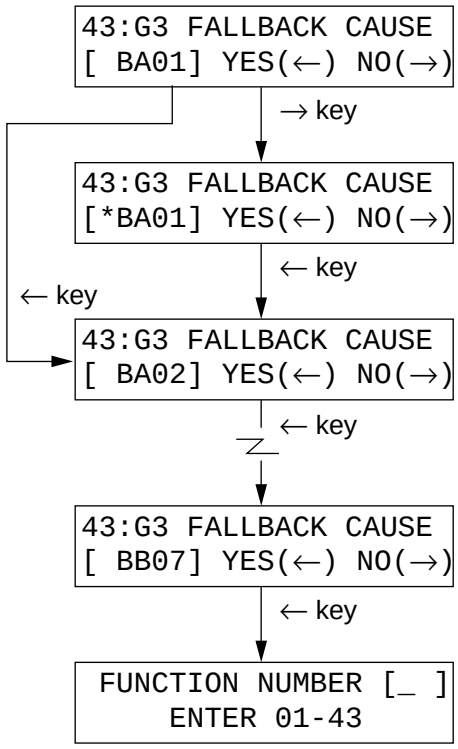
T.F. No.	Name of Function	The Display Shows
23	MF attenuator	
24	Ring duration detection time	 (Example)
25	CML timing	 (Example)
26	LED Head strobe	 (Example)

Table 2.4 (5/6) Technial Functions

T.F. No.	Name of Function	The Display Shows
27	Media type	27:MEDIA TYPE [X] YES(←) NO(→) → Setting X: M → MH → H
28	Transfer roller clatch current	28:TR LATCH CURRENT [X] YES(←) NO(→) → Setting X:-2 → -1 → 0 → +1 → +2
29	NSF switch	29:NSF SWITCH [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
30	ID/TSI priority	30:ID/TSI PRIORITY [X] YES(←) NO(→) → Setting (Toggle) X: ID ⇆ TSI
31	Toner count clear	31:TONER COUNT CLEAR [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
32	Parallel Pick Up	32:PARALLEL PICK UP [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
33	V.34 TX retry	33:V.34 TX RETRY [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
34	Symbol rate	34:SYMBOL RATE [X] YES(←) NO(→) → Setting (Toggle) X:2400 → 2800 → 3200 → 3429
35	Leased line	35:LEASED LINE [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
36	CED send	36:CED SEND [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
37	Fax2Net Function	37:FAX2NET FUNCTION [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON

Table 2.4 (6/6) Technial Functions

T.F. No.	Name of Function	The Display Shows
38	Top feed	38:TOP FEED [X] YES(←) NO(→) → Setting X:1→ 2 → 3•••9 → -1 → -2 → -3•••-10 → 0
39	Bottom feed	39:BOTTOM FEED [X] YES(←) NO(→) → Setting X:1→ 2 → 3•••10→ -1 → -2 → -3 ••• 0 → -2
40	G3/G4 learning	40:G3/G4 LEARNING [X] YES(←) NO(→) Note 1 → Setting (Toggle) X: OFF ⇆ ON
41	LLC check (Lower layer compatibility information)	41:LLC CHECK [X] YES(←) NO(→) Note 1 → Setting (Toggle) X: OFF ⇆ ON
42	G3 setup BC	42:G3 SETUP BC [X] YES(←) NO(→) Note 1 → Setting (Toggle) X: OFF ⇆ ON
43	G3 Fallback cause	Note 1 Note 2 

Note 1: Changed only when G4 opt. mounted.

2:
- 54 types of service codes are displayed in order by pressing the ← key. (See G3 fallback service code list)
- Use the → key to change whether G3 fallback is targeted.
- An asterisk * just before the service code is performed by G3 fallback.
- The set values selected until now are valid even when the STOP key is pressed during processing.

Table 2.5 G3 Fallback Object Service Code List (If G4 TX is faulty)

Classification	Code	Description	Remarks
Dch layer 3	BA01	Unallocated (unassigned) number	*
	BA02	No route to specified transit network	*
	BA03	No route to destination	*
	BA06	Channel unacceptable	*
	BA07	Call awarded and being delivered in an established channel	*
	BA10	Procedure sequence error, Line disconnected during in-band procedure	*
	BA11	User busy	Handling of the redial
	BA12	No user responding	*
	BA13	No answer from user (user alerted)	*
	BA15	Call rejected	*
	BA16	Number changed	*
	BA1A	Non-selected user clearing	*
	BA1B	Destination out of order	*
	BA1C	Invalid number format	*
	BA1D	Facility rejected	*
	BA1E	Response to STATUS-ENQUIRY	*
	BA1F	Normal, unspecified	*
	BA22	No circuit/channel available	Handling of the redial
	BA26	Network out of order	*
	BA29	Temporary failure	Handling of the redial
	BA2A	Switching equipment congestion	*
	BA2B	Access information discarded	*
	BA2C	Requested circuit/channel not available	Handling of the redial
	BA2F	Resources unavailable, unspecified	*
	BA31	Quality of service unavailable	*
	BA32	Requested facility not subscribed	*
	BA39	Bearer capability not authorized	*
	BA3A	Bearer capability not presently available	*
	BA3F	Service or option not available, unspecified	*
	BA41	Bearer capability not implemented	*
	BA42	Channel type not implemented	*
	BA45	Requested facility not implemented	*
	BA46	Only restricted digital information bearer capability is available	*
	BA4F	Service or option not implemented, unspecified	*
	BA51	Invalid call reference value	*
	BA52	Identified channel does not exist	*
	BA53	A suspended call exists, but this call identity does not	*
	BA54	Call identity in use	*
	BA55	No call suspended	*
	BA56	Call having the requested call identity has been cleared	*
	BA58	Incompatible destination	*
	BA5B	Invalid transit network selection	*
	BA5F	Invalid message, unspecified	*
	BA60	Mandatory information element is missing	*
	BA61	Message type non-existent or not implemented	*
	BA62	Message not compatible with call state or message type non-existent or not implemented	*
	BA63	Information element non-existent or not implemented	*
	BA64	Invalid information element contents	*
	BA65	Message not compatible with call state	*
	BA66	Recovery on timer expiry	*
	BA6F	Protocol error, unspecified	*
	BA7F	Interworking, unspecified	*
	BB01	CONN message wait time out	*
	BB07	Reset request by network	

All service code can be selected by G3 Fallback cause (Technical function: No. 43)

2.2.1.4 User's Functions

This section explains the items usually set up by general users.

Table 2.6 shows the initial setting items and their purposes.

Each F.P.can be accessed by entering the corresponding function number on Function Programming.

The detailed procedure of the initial setting items will be explained on the following pages.

Note: S-ON: Effective if the service bit has been set on.
FP: Function program setting
TF: Technical function setting

1) User's Functions

Table 2.6 (1/7) User's Functions

No.	Item	Specifications
1	Auto dial 1) One-touch dial	10 one-touch keys are provided. (OKIFAX4550/ OKIOFFICE87) Max. 32 digits for each location number for OKIFAX4550. Max. 40 digits for each location number for OKIOFFICE87. In addition to an ordinary location number, another alternate location number can be registered in to each one-touch key. Purposes of this alternate location number: 1) Fax dial A fax number is registered as an alternate location number. When a call to the first location number is not answered, the alternate location number will be automatically dialled. (1) TEL No. Registration ***Note 1:*** If the telephone number is only registered, data can be registered in OT without registering ID and communication parameters. ***2:*** When TEL No. is registered for E-mail or Web-Url-registered one-touch, E-mail or Web Url is deleted. ***3:*** At registration, the following areas are initialized. (However, they are not initialized at entry of the same number.) • Redial/ Communication parameters/Learning parameters (2) E-mail registered. • Set the caps mode to OFF at start of registration. ***Note 1:*** If an E-mail address is registered for TEL No. or Web-Url-registered one-touch, the TEL No. or Web Url is deleted. ***2:*** Maximum number of entered digits: 64 ***3:*** When E-mail is already registered for the OKIFAX 4550 or OKIOFFICE87, even if the account No. is deleted, the registered contents are stored. (E-mail is recovered by entering the account No. again.) ***4:*** At registration, the following areas are initialized. (They are not initialized at entry to the same destination.) • Redial/ Communication parameters/Learning parameters (3) Web Url registered • Set the Caps mode to OFF at start of registration. • “http://” cannot be edited. Excluding these characters, 64 characters can be registered. ***Note 1:*** When Web Url is registered for TEL No. or E-mail-registered one-touch, TEL No. or E-mail is deleted. ***2:*** The Web-Url-registered one-touch cannot be group-registered.

Table 2.6 (2/7) User's Functions

No.	Item	Specifications
		3: When Web Url is registered in a one-touch in a group, the one-touch is deleted from the group destination. ***4:*** Since the OKIFAX4550 and OKIOFFICE87 are already registered in Web Url, the registered contents are stored even if the account number is deleted. (Web Url is recovered by entering an account number again.) ***5:*** At registration, the following areas are initialized. (They are not initialized at input to the same destination.) • Redial/ Communication parameters/Learning parameters (4) E-Mail/Web Registration in OT by PC/RMCS 1. E-mail/Web registration conditions (common to OKIFAX 4550 and OKIOFFICE87) • FaxNet Function = ON with account No. registered • Other than OT in progress of reserved communication 2. OKIOFFICE87: • E-mail and Web can be registered in the OT area by PC/RMCS. • One of Tel, E-mail, and Web can be registered in the OT area. (Example: When Fax is already registered, if E-mail is registered, Tel is erased.) • When E-mail or Web is already registered, even if the account No. is deleted, the registered contents are held. (The E-mail or Web is recovered by entering the account No. again.) • To register Tel, E-mail, or Web, initialize each of the redial, communication parameter, and learning parameter areas. 3. OKIFAX 4550: • E-mail or Web can be registered in the OT area by the RMCS. • Tel can only be registered from PC. • When E-mail or Web is already registered, if Fax is registered from PC, the E-mail or Web is processed preferentially. (Tel and E-mail or Web are registered doubly in the OT area.) • When Fax and E-mail or Web are registered doubly, if the account No. is deleted, the E-mail or Web registered contents are held. (E-mail or Web is recovered by entering the account No. again.) • To register Tel, E-mail, or Web, initialize each of the redial, communication parameter, and learning parameter areas.
	2) Two/Three-digit dial	70 different codes are provided. (OKIFAX4550) 100 different codes are provided. (OKIOFFICE87) * Two- digit location code: 01 to 70 (OKIFAX4550) * Two-digit or max. three-digit location code: 01 to 99, 100 (OKIOFFICE87)

Table 2.6 (3/7) User's Functions

No.	Item	Specifications
		Max. 32 digits for each location number for OKIOFFICE87. Max. 40 digits for each location number for OKIOFFICE87. ***Note 1:*** If a telephone number is registered, data can be registered without registering ID and communication parameters. ***2:*** E-mail or Web cannot be registered in abbreviated dials. ***3:*** At registration, the following areas are initialized. (However, they are not initialized at entry of the same number.) • Redial/ Communication parameters/Learning parameters
	3) Keypad dial	With ten-key pad. Max. 40 digits for one operation
	4) Chain dial	The number of dialling digits can be expanded to longer digit numbers by chaining any number of the above 1), 2) and 3).
	5) Mixed dial	Type of dialling can be changed from pulse dial to tone dial halfway in dialling process. The changing point is specified by the * key. This feature is not available in all countries.
2	Manual dial	With a telephone handset.
3	Receive mode	Selectable by key operation.
	1) Auto receive mode	Selectable by key operation.
	2) Manual recevice mode	Selectable by key operation.
	3) Telephone/fax automatic switchover	The fax recognizes a fax call from a verbal call as follows: If the fax detects a call with a CNG signal, it starts an automatic document receive operation. If it detects a call without a CNG signal, it sounds the buzzer to indicate a voice call. Operator can answer the call by lifting the telephone handset. If he or she does not lift the handset within predetermined time (20 sec. or 35 sec.), the fax automatically starts a document receive operation. * FP + 10 (To determine the timer.) ***Note:*** Refer to page 115.

Table 2.6 (4/7) User's Functions

No.	Item	Specifications
4	Automatic redial	PTT parameter setting disables or enables this feature, and specifies redial times and redial intervals. * See 2.9.9 for the service bit condition depending on PTT parameters.
5	Last No. redial	"REDIAL" key is provided. There is no limit on number of repeat attempts. If machine is in Power Save mode (not available for ODA version) manual redial with REDIAL key is not possible.
6	Group dial	• 5 dialling groups (OKIFAX4550/OKIOFFICE87) Max. 80 locations. (OKIFAX4550) Max. 110 locations (OKIOFFICE87) Grouping some one-touch keys and some two/three-digit auto dial codes to which telephone numbers have been assigned. This group setting makes broadcast operation simple. 1) OT for E-mail registration can be mixed with OT/AD for Tel No. registration; however, Web URL cannot be registered. 2) OT for Web Url registration cannot be specified. 3) When no account No. is registered at FaxNet function = OFF or Fax2Net Function = ON, OT for E-mail registration cannot be specified. 4) Search processing by the SEARCH key is performed. • OT for Tel or E-mail registration is searched in the Fax2Net enabled state. (OT for Web Url registration is not a search target.) • OT for Tel registration is only search-targeted in Fax2Net disabled state (3) above). 5) After OT for E-mail registration is registered in a group at registration of an account No., if the account No. is erased, all OTs for E-mail registration registered in the group are erased. 6) Same as above at registration by PC or RMCS
7	Telephone directory and location ID (Alpha search)	In addition to fax numbers, an alpha/ numeric name can be assigned to each of one-touch keys and two/three-digit dial codes, 01 to 70, for OKIFAX4550 and 01 to 99, 100 for OKIOFFICE87. Any location ID can be searched and displayed on LCD. Then direct dialling to the ID's station can be performed. There are two methods of searching: (1) Search based on the first character specified. (2) Searching by displaying all registered location IDs one after another in the lexicographical order. Location ID: Max. 15 characters

Table 2.6 (5/7) User's Functions

No.	Item	Specifications
8	Local copy	Printing resolution: Horizontal: 300 dpi (Fine, EX Fine), 200 dpi (SDT) Vertical: 3.85 (STD), 7.7 (Fine) or 15.4 line/mm (EX Fine)
9	Multiple local copy	Up to 50 copies.
10	Manual loading feeder	One single sheet from the feeder below the paper exit can be copied. Example of sheets:Transparency for an overhead projector
11	Broadcast (Memory transmission)	Max. 90 (OKIFAX4550), Max. 120 (OKIOFFICE87) remote locations can be specified by the following means: • One-touch keys (with of without a group list). • Two/three-digit auto dial codes. • 10 keypad dial number (Max.) One delayed time of calling for this feature can be specified unless any other delayed calling feature has been specified. The combination of 1 delayed broadcast and one immediate calling of broadcast is possible. However, the setting of delayed transmission and delayed broadcast must not exceed the total number of specified time which is different according to the machine. When multiple locations are specified for one broadcast (1) The fax prints a broadcast entry report, if specified in operating sequence. (2) The fax can print a broadcast confirmation report. (FP + 02 To enable or disable this printout)
12	Delayed transmission from the memory	The fax can automatically transmit documents at five specified times from the memory.
13	Polling transmission (To be polled)	Document(s) placed on the feeder can be collected by a remote station.
14	Polling reception	The fax can collect documents from one remote station.
15	Bulletin polling	A kind of polling transmission. Bulletin polling enables polling transmission many times until deleting the documents stored in the memory.
16	Transmission preparation (Hopper)	An operator can prepare documents for transmission even while the fax is enagaged in message reception. They will be automatically transmitted upon completion of the reception. An operator can also prepare documents for transmission during transmission from memory.

Table 2.6 (6/7) User's Functions

No.	Item	Specifications
17	No toner reception	The fax can temporarily store received messages in memory when toner has run out. The messages are printed when toner has been newly supplied or an operator presses the SELECT FUNCTION key followed by the one-touch key No. 2 under the LCD message “PRINT MEMORY MSG.” in the standby mode. *FP + 22 (To enable or disable this function)
18	Smooth printing	The documents received in the STD mode can be printed at the FINE resolution by means of generating one line based on the two consecutive original lines and printing it between them.
19	Dual Access	The documents for transmission can be read into the memory even while the fax is engaged in another memory transmission, reception in the ECM or non-ECM mode. 1) Operation of memory transmission while the fax is engaged in a communication (memory TX, memory RX or print mode RX). 2) Copy while the fax is engaged in a communication (memory TX or memory RX). ***Note:*** Condition for operation a) Copy is invalid when the machine is already engaged in an operation which is using or could use the printer. 3) Call reception while the fax is engaged in scanning documents for memory transmission when the auto receive mode is in “FAX” or “T/F” mode, although “TEL” mode is not valid. Refer to sub-section 2.9.7 for dual access operation. For the patterns of dual access refer to the following, Dual Access Combination Table.

Table 2.6 (7/7) User's Functions

No.	Item	Specifications

Dual Access Combination Table

1'st \ 2'nd		PC1 ON				
		Reception	Prefeed	Remote input display	Preparation TX	Scanning to Memory
ON HOOK	Standby	○	○	○	○	○
	During FAX Calling	×	○	×	×	○
Call Reception	During RING RESPONSE	×	○	○	○	○
	During detection of TEL/FAX	×	○	×	×	×
	During TAD detection	×	○	×	×	×
	1st Phase B	×	○	○	○	○
Feeder TX	Calling ~ Transmission	×	×	×	×	○
	Transmission after scanning	×	○	○	○	○
Memory TX	During Scanning	○	×	×	×	○
	Dialling and Calling	×	○	○	○	○
	During TX	×	○	○	○	○
Polling RX	Dialling and Calling	×	○	○	○	○
Memory RX		×	○	○	○	○
Paper RX	Reception and print	×	○	○	○	○
	Residual Print Processing	○	○	○	○	○
	Memory reception	×	○	○	○	○
During voice request is initiated.		×	○	×	×	×
During copy		○	○	×	×	×
During automatic printing of received messages		○	○	○	○	○
During automatic printing of reports		○	○	○	○	○
During operation		×	○	×	×	×

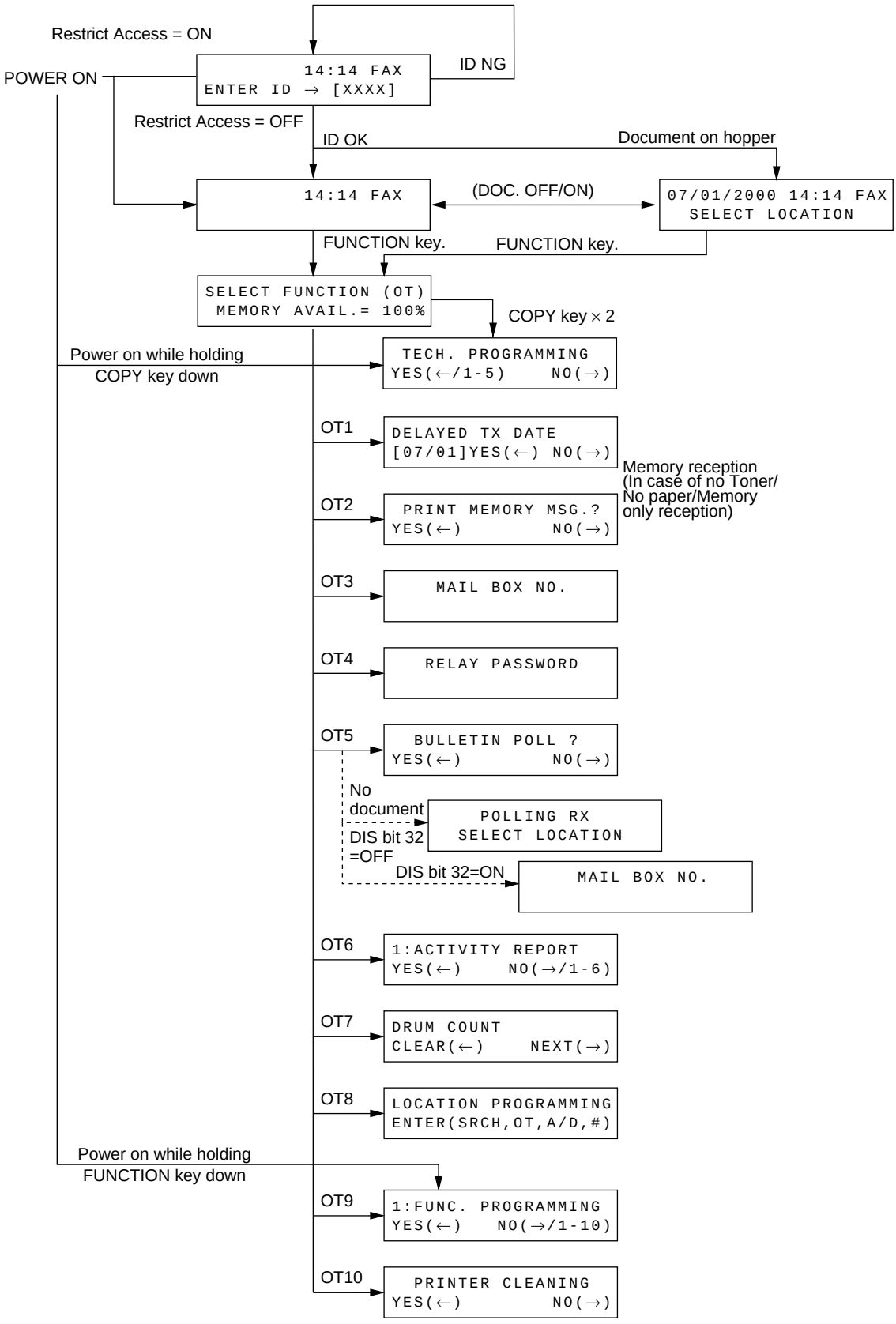
* Operation during communication is not determined yet.

<Note> ○: Available, ×: Not available

2) User's Initial Settings

Note: The fonts displayed on the LCD operation panel may differ from fonts written this manual.

2)-1 One Touch Key Operations



Note: OT2, OT6 - OT10 are invalid during PC printing.

Table 2.7 (1/6) User's Initial Settings (One-touch key Program)

F+OT No.	Item	Specifications
1	Delayed transmission (TX)	This function enters a message transmission time(s) and location(s) for execution at a specified time. 5 specified times can be registered (within 3 days.)
2	Print from Message in Memory (Print Memory MSG.)	To print out the received messages from memory in "MSG. IN MEMORY" mode, or when the machine has run out of recording paper (including the door open and no toner state). When received messages are in the memory. "MSM. IN MEMORY" is indicated on the LCD. When printing in the Memory Only Reception, an operator has to print the received message by the Memory message printing operation.
	Print from Confidential Reception Message (Print Personal Box)	To print out the confidential received messages in the memory with 1-digit personal box number. The maximum number of personal boxes is 8. Personal boxes are numbered 1 to 8. When confidential received messages are in the memory, "MESSAGE IN MEMORY" is indicated on the LCD.
3	Confidential transmission	This function transmits a Confidential-marked message to any one of 64 predesignated mailboxes provided in a distant machines. To program the mail box number 01 to 64. Available remote station's mail box numbers: OKIFAX 2400/2600: 01 to 40 OKIFAX 1000: 01 to 16 OKIFAX 2300/OF-18/OF-150: 01 to 16 OKIFAX 38/OF-27: 01 to 64 OKIFAX 2350/1050: 01 to 08 OKIFAX 2450: 01 to 08 OKIFAX 5200/5300: 01 to 08 OKIFAX 5500/5600: 01 to 16 OKIFAX 5700/5900: 01 to 16 OKIFAX 5750/5950: 01 to 16 OKIOFFICE84/OKIFAX 4500: 01 to 08 OKIFAX 4550/OKIOFFICE87: 01 to 08 OKIFAX 5400/5650: 01 to 16
4	Relay broadcast initiate transmission	This function automatically originates a message call via relay key station (which must be equipped with OKIFAX 2600, OF-38, OF-27, OKIFAX5950 or equivalent) up to 120 locations for OKIFAX 2600 and 99 locations for OF-38 or OF-27. To program relay password. To enable or disable the relay report. When auto dial code number 70 (OKIFAX4550)/100 (OKIOFFICE87) is not assigned, relay broadcast report is not transmitted. When it is assigned, relay report is transmitted to fax number assigned to auto dial code 70, for OKIFAX4550 or to auto dial code 100 for OKIOFFICE87.
5	Polling transmission/reception	Polling TX: The documents placed on the feeder can be collected by a remote station. Bulletin polling: A kind of polling transmission. Bulletin polling enables polling transmission many times until deleting the documents from one remote station. Polling RX: The fax can collect documents from one remote station.

Table 2.7 (2/6) User's Initial Settings (One-touch key Program)

F+OT No.	Item	Specifications
6	Report printing	The report print in 6 items are as follows: 1. Activity report 2. Broadcast message confirmation report (Multi location) 3. Activity memory files report 4. Phone directory report 5. Configuration list without service default (Service default report if service bit sets to ON.) 6. Protocol dump list 7. Log report (Set to on Service bit) 8. G4 Log. report (Operatable only at G4 opt. & Service Bit = ON) * Refer to Reports and Lists of Chapter 1.
7	Selection of Counter display	The operation for displaying and clearing the print counters in five ways are as follows: 1. Drum counter When I/D unit reaches run-out time, “CHANGE DRUM” is appeared in LCD. Under above condition, user can see the Drum message and clear. However, No. of counter is not shown for user (Service bit=OFF). After user changed the Drum and clear operation, “CHANGE DRUM” in LCD is displayed. However, the drum counter clear is possible even if the drum is not at the end of its lifespan. 2. Toner counter This counter provided to serviceman to check the number of toner counter. When srvice bit=OFF, this counter message is skipped. When service bit=ON, this counter is cleared by operation. When TF31=ON, this counter is cleared by operation without Service bit ON/OFF (TF01). (User can clear the toner counter.) 3. Drum (T) counter This counter to serviceman to know the total number of DRUM counter for the machine. When service bit=OFF, this counter message is skipped. When service bit=ON, this counter is cleared by operation. 4. Print counter This counter is provided to user. Display shows how many times recording paper has been printed. But user cannot clear this number. 5. Scan counter This counter is provided to user. Display shows how many times document has been passed the ADF. But user cannot clear this number.

Table 2.7 (3/6) User's Initial Settings (One-touch key Program)

F+OT No.	Item	Specifications
8	Location program 1. One-touch key	One-touch keys allow registering: (1) Telephone number (numeral, -, P and space) in 32 digits for OKIFAX4550 and 40 digits for OKIOFFICE87. (2) Alternate fax telephone number in 32 digits for OKIFAX4550 and 40 digits for OKIOFFICE87. (additional registration) (3) ID for the telephone directory function in 15 characters (alphabetic, numeric and symbolic). (4) 10 one-touch keys are provided.
	2. Two-digit or max. three-digit auto dial program	Auto-dial No. 01 to 70 for OKIFAX4550, No. 01 to 99, 100 for OKIOFFICE87 allows registering telephone number in 32 digits (numeral, -, P and space) for OKIFAX4550 and 40 digits for OKIOFFICE87 and ID for the telephone directory maximum 15 characters (alphabetic, numeric and symbolic).
	3. Group setting	Grouping some one-touch keys and some two-digit auto dial codes to which telephone numbers have been assigned. Five group programming are available. The group programming makes multiple polling reception and broadcast operation simple.
9	User's programs 1. Function program	01: MCF (SINGLE-LOC.) 02: MCF (MULTI-LOC.) 03: ERR. REPORT (MCF.) 04: IMAGE IN MCF. 05: SENDER ID 06: MONITOR VOLUME 07: BUZZER VOLUME 08: CLOSED NETWORK 09: TX MODE DEFAULT 10: T/F TIMER PRG. 11: RING RESPONSE 12: DISTINCTIVE RING 13: PAPER SIZE 14: USER LANGUAGE 15: INCOMING RING 16: REMOTE RECEIVE 17: MEM./FEEDER SW. 18: POWER SAVE MODE 19: ECM FUNCTION 20: REMOTE DIAGNOSIS 21: PC/FAX SWITCH 22: NO TONER MEM RX 23: MEM FULL SAVE 24: CONTINUOUS TONE 25: INSTANT DIALING 26: RESTRICTED ACCESS 27: WIDTH REDUCTION 28: TONER SAVE 29: CNG COUNT 30: ISDN DIAL MODE 31: SPEECH RECEIVE 32: USB CONV. MODE 33: PAPER SIZE CHECK 34: PRINT JOB T.O. Refer to Table 2.7 for specification of the function programs No. 01 through 34.

Table 2.7 (4/6) User's Initial Settings (One-touch key Program)

F+OT No.	Item	Specifications
	2. Dial parameters	1. REDIAL TRIES 2. REDIAL INTERVAL 3. DIAL TONE DETECT 4. BUSY TONE DETECT 5. MF (TONE)/DP (PULSE) 6. PULSE DIAL RATE 7. PULSE MAKE RATIO 8. PULSE DIAL TYPE 9. MF(TONE) DURATION 10. PBX LINE 11. FLASH/EARTH/NORMAL 12. AUTO START 13. DIAL PREFIX Refer to Table 2.6 and 2.2.1.9 for specification of dial parameter settings.
	3. Clock adjustment	Date and time adjustment. ***Note:*** Data outside 1996 to 2095 cannot be registered.
	4. System data program	(1) TSI/CSI (except for SUI and AUT) Registration of TSI/CSI/CIG (numbers, + and space) in 20 digits. TSI: Transmitting Subscriber Identification CSI: Called Subscriber Identification CIG: Calling Subscriber Identification (2) SENDER ID Registration of sender ID (alphabetic, numeric and symbolic) in 32 digits. (3) CALL BACK NO. Registration of telephone number for call-back message (alphabetic, numeric and symbolic) in 20 digits.
	5. Personal box programming	To allow the operator (in this case, a person who wishes to assign a password to personal box) to assign a two functions to 8 personal-box. (a) Confidential RX (b) Bulletin Polling TX Used with confidential RX and Bulletin polling TX and Advanced T30 protocol. Personal box setting for Bulletin poll using SEP frame and Confidential using SUB frame when remote machine has a SEP/SUB capability. The box No. 0 is used for only global Bulletin Polling TX.
	6. Forwarding number programming	Specify the destination of forwarding for incoming call. Ahen the transfer destination telephone number is set, forwarding can be specified. The message is first received in the memory and when this reception is completed, the fax automatically transfers the message to one designated location. 1) Number of forwarding for incoming call destination that can be specified. OKIFAX 4550/OKIOFFICE87: 1 2) Number of characters used to specify a destination. 32 characters (numeral, -, P and Space) for OKIFAX4550 and 40 characters for OKIOFFICE87.

Table 2.7 (5/6) User's Initial Settings (One-touch key Program)

F+OT No.	Item	Specifications
	7. Memory password programming	Registering the password required (4-digit numerals) for outputting the data received by Memory Only Reception mode or change from Memory Only Reception mode. When the four-digit numeric password is registered. The password input is required upon outputting documents or change from Memory Only reception mode.
	8. FAX Network Programming	The Incorporation of the FAX2NET function requires the following registration operation: 1) FAX 2NET server telephone number: Telephone number of the FAX2NET server to be used (Max 32 digits for OKIFAX4550 and Max. 40 digits for OKIOFFICE87). 2) Account number: ID particular to terminal registered in FAX2NET service. The user must fetch this number individually from FAX2NET. Up to 14 characters including. 3) International telephone prefix (10-digit max.): Number required to decide whether the FAX2NET service should be started. * Only when Fax2Net Function = ON. See Appendix I "FAX2NET Function".
	9. FAX2NET Service	The following FAX2NET services are avilable. 1) Web Retrieval Web Retrieval is a function available for a Web printing request to FAX2NET server by using a Web URL the assigned to one-touch key. The FAX2NET server facsimile-sends its data to the request source. This is performed in normal G3 communication mode. 2) Broadcasting Groups can be registered in the Fax2Net server. By specifying the group at the facsimile, the Fax2Net server transmits the image to the respective destinations that are in that group. 3) Prepaid Card Registration Prepaid card registration is a function available for the prepaid card information to the FAX2NET server by inputting the card number from the user menu. * Only when Fax2Net Function = ON. See Appendix I "FAX2NET Function".
	10. Restrict ID programming	Restrict ID is a function available only person who knows Password, and this function can register 24 types of ID (Department No.) when Restrict Access of user's setting No. 26 is set to ON. * Only when Restrict Access = ON.

Table 2.7 (5/6) User's Initial Settings (One-touch key Program)

F+OT No.	Item	Specifications
	11. ISDN programming	Sets to Country code, ISDN No. (subscriber number), ISDN ID (subscriber code) and ISDN sub address. 1) Setting values This setting consists of the following: • Country code: 3 characters (digits only) • ISDN No. (subscriber number): 20 characters (digits only) • ISDN ID (subscriber code): 10 characters (alphabetic characters, lowercase characters) Handling in G3 mode Handling in G4 mode Not used Switching in standard procedure. User for location display. Used for TSI/CIL printing. ISDN No.used for collating closed area communication. In case of origination, the ISDN number if used for reporting the calling subscriber number, it is reported to the network. In case of termination, the ISDN number is used for MSN collation. • ISDN sub address: 19 characters (digits only) Handling in G3 mode Handling in G4 mode Used for sub collation. ***Note 1:*** This setting can be made when G4 option is mounted. ***2:*** The setting data must be transferred to the G4 board.
10	Printer cleaning	This drum cleaning function removes the residual toner on the I/D (image drum) Unit surface by printing.

2)-2 Function Program

Table 2.8 (1/6) User's Initial Settings (Function Program)

P.F. No.	Item	Specifications	Default
01	Message confirmation report (Single location)	Enables or disables the automatic message confirmation report printing after a single location call. ON: Printing the MCF report. OFF: Disables this function.	
02	Message confirmation report (Multiple locations)	Enables or disables the automatic message confirmation report printing after a multiple polling or broadcast. ON: Prints the MCF report. OFF: Disables this function.	
03	Error report (MCF)	Enables or disables the automatic error report printing when transmission error occurs. (Excepts for service bit “0”.) ON: Printing the error report. OFF: Disables this function.	
04	Image in MCF	Enables or disables the automatic printing of the image on the first sheet below the message confirmation report. ON: Printing the image in MCF report. (Memory transmission and if the report is printed automatically.) OFF: Disables this function.	
05	Sender ID	The fax can transmit programmed alphanumeric message, such as company’s name consisting of up to 32 characters. Enables or disables the sender ID function. * (Outside only) ON: Enables OFF: Disables	
06	Monitor Volume	Controls the volume. OFF/Low/Mid./H-Mid./High selectable.	
07	Buzzer volume	Selects the sound volume of each buzzer (end of communication buzzer, voice request buzzer and off-hook alarm) and software ringer from high, low and middle levels. Low/Mid/High selectable. ***Note:*** Fixed a low level for key touch tone.	

Table 2.8 (2/6) User's Initial Settings (Function Program)

P.F. No.	Item	Specifications	Default
08	Closed network	The fax compares lower four digits of TSI/CSI received from remote station with fax numbers registered locally for one-touch dial and two-digits autodial. If unmatched, the communication will be automatically disconnected. OFF/RX only/TX and RX selectable. * Prevention of direct mail or wrong number calls. (Reference) TSI: Transmitting subscriber identification CSI: Called subscriber identification	
09	TX mode default	Selects automatically the mode set up when a document is loaded on the feeder. The following combinations are selectable. STD/NORMAL→STD/DARK→STD/LIGHT→ FINE/NORMAL→FINE/DARK→FINE/LIGHT→ EX.FINE/NORMAL→EX.FINE/DARK→ EX.FINE/LIGHT→PHOTO/NORMAL→ PHOTO/DARK→PHOTO/LIGHT→ STD/NORMAL→ • • •	
10	Telephone/fax automatic switchover time	Specifies the time for which the fax alerts an operator on reception of a call in the telephone/fax automatic swichover mode. 20 sec./35 sec. selectable Refer to page 2-30	
11	Ring response time	User can register ring response time if National code is: INT'L, GBR, NOR, SWE, USA, HOL, ESP. ITA, GRE or GER Selects the ring response time. 1 ring/5/10/15/20 sec. selectable.	
12	Distinct ring	Specifies the detected distinct ring. (not available in all countries) OFF/ON/SET selectable.	
13	1'st cassette paper size	Selects A4, LETTER or LEGAL 13˜, LEGAL 14˜, EXEC., A5, A6, JISB5 by this function. The operator must select the preferable paper size as the machine cannot detect the paper size automatically. ***Note:*** EXEC., A5 or A6 message appears when operating with MFP terminal.	

Table 2.8 (3/6) User's Initial Settings (Function Program)

P.F. No.	Item	Specifications	Default
14	User language	A choice of 2 languages for LCD and print message are available. GER, FRE etc. are displayed insted of OTHER. ENGLI/OTHER selectable.	
15	Incoming ring	Instead of ringer circuit, software can control built-in speaker to ring sound. To enable (ON) or disable (OFF) or distinctive ring (DRC) a software generated ring sound to indicate arrival of an incoming bell.	
16	Remote receive	This function is used to transfer a call received by an external telephone set (connected to fax) by entering two-digit MF tones if the remote receive setting is not OFF The following combinations are selectable. 00/11/22/33/44/55/66/77/88/99/**/###/OFF selectable. ***Note:*** Parallel pick-up control inhibited when this is set to OFF.	
17	Memory and feeder switch	Switches the transmission mode between the memory and feeder. MEM. TX/FEEDER TX selectable. ***Note:*** This function becomes effective when Instant Dial of No. 25 is set to OFF.	
18	Power save mode	The power supply will be fed to all circuits of a fax machine whenever the fax goes to the operating state. The power save mode has reduced the power consumption at standby to below 0.5 W. ***Note:*** Power save mode is not available for ODA version. (including LTA, MEX) Pre-heating time (Standby to print): Approx 30 sec Eanbles or disables power save mode ON: Enables OFF: Disables	
19	ECM function	Enables or disables ECM (error corection mode) communication. ON: Enables OFF: Disables	
20	Remote diagnosis	Enables or disables the remote diagnosis function when the machine can allow remote diagnosis from remote center. ON: Enables OFF: Disables	

Table 2.8 (4/6) User's Initial Settings (Function Program)

P.F. No.	Item	Specifications	Default
21	PC/FAX switch	To enable or disable PC interface function. When PC reception is not available, for example, application is not activated on the PC or cable is missing between PC and fax etc., this setting allows to switch from PC to fax reception automatically. ON: Automatically change to fax reception OFF: No reception	
22	No toner memory reception (NO Toner MEM RX)	Enables or disables the memory reception when the fax is the toner low condition. ON: Receives the message in the memory reception when the fax is the toner low condition. The messages are printed when toner has been newly supplied. OFF: Prints the message even the remaining toner level is low or none. Print quality is not guaranteed.	
23	Memory full save (MEM Full Save)	Broadcast transmission and other features originate calls after all the document read in memory. When Memory Full occurs during reading documents and operator time out occur, all the readout data must be deleted (OFF setting) or all the data must be sent (ON setting). Select either ON or OFF setting as follows: ON: Selecting display OFF: Selecting delete at all times. ***Note:*** Operator timeout means operator does not respond during 59 seconds.	
24	Continuous Tone	Setting of sounding warning tone after reception. ON: Warning tone sounding stops by operator's STOP key pressing OFF: No warning tone	
25	Instant Dialing	Setting to start reading documents upon call origination when transmitting. ON: Dialing while document scanning OFF: Dialing after document scanning	
26	Restricted Access	Restricted Access limits accessible users by setting a password beforehand. Inputting the password then enables the user's access to the machine (FAX terminal). ON: Enables Restricted Access OFF: Disables	

Table 2.8 (5/6) User's Initial Settings (Function Program)

<table>
<tr><th>P.F. No.</th><th>Item</th><th>Specifications</th><th>Default</th></tr>
<tr><td>27</td><td>Width Reduction</td><td>This function can print characters written at the edges of a document.
Switches the reduction of the horizontal scanning direction.

ON: Reduction printing (216 mm to 203 mm)
Reduction rate is shown as below.
Copy
<table>
<tr><td></td><td>STD</td><td>Fine</td><td>EX Fine</td></tr>
<tr><td>A4 size</td><td>97.9%</td><td>97.5%</td><td>97.5%</td></tr>
<tr><td>Except A4 size</td><td>94.5%</td><td>95.0%</td><td>95.0%</td></tr>
</table>
Reception message
<table>
<tr><td>8 dot/mm</td><td>300 DPI</td></tr>
<tr><td>94.1%</td><td>92.6%</td></tr>
</table>
OFF: 203 mm printing</td><td></td></tr>
<tr><td>28</td><td>Toner save</td><td>Determine whether toner saving is to be performed furing fax printing.
When a LAN/PC printer is used, this setting is ignored and the command from the host is executed.
1) Setting value
ON(Toner saving performed)/OFF(Toner saving is not performed)</td><td></td></tr>
<tr><td>29</td><td>CNG Count</td><td>When T/F, TAD, or Parallel pickup is operatimg in CNG signal detection processing, this setting can be shifted to the facsimile reception mode at the time of number of CNG signal detedction times are equal to the set values.
1) Seting values
1 - 5 (in one-tray steps)
• Selection is skipped over when the ISDN board is mounted (sellection allowed if SERVICE BIT = ON).</td><td></td></tr>
<tr><td>30</td><td>ISDN Dial Mode</td><td>Determine whether G4 communication is to be performed by calling a signal remote machine by pressing ten-keys when an G4 option is mounted.
1) Setting values
G3 MODE(G3 communication)/G4(G4 communication)
• This setting cannot be made when an G4 option board is not provided.</td><td></td></tr>
</table>

Table 2.8 (6/6) User's Initial Settings (Function Program)

P.F. No.	Item	Specifications	Default
31	Speech Receive	Determine whether the incoming call is answered when the information transmission capacity instracted by the network is voice transmission. 1) Setting values ON(Answered)/OFF(Not answered) • This setting cannot be made when G4 option board is not provided.	
32	USB Conv. Mode (USB: Universal Serial Bus)	This function is available for OKIOFFICE87. Sets to use or not the Centro I/F in USB Conv. Mode (unidirectional printer mode). 1) Setting values ON(USB conv. mode)/OFF(MFPI mode)	
33	Paper Size Check	Sets to check or not the recording paper size specified by the command that set by the terminal for PC printing in USB Conv. Mode. 1) Setting values ON(Checked)/OFF(Not checked) • The operation of the machine when paper size differs is as follows: ON: Paper request appers just before printing and recording paper size jam is verified after activation of printing. OFF: Paper request does not appers just before printing and recording paper size jam is verified after activation of printing. ***Note:*** Setting is disabled when USB Conv. Mode is OFF.	
34	Print Job T.O.	Sets to interrupt printing when job-end command cannot be detected within the set time to stote the data received from Centro I/F in print buffer for PC printing in USB Conv. Mode. 1) Setting values 5SEC/30SEC/5MIN ***Note:*** Setting is disabled when USB Conv. Mode is OFF.	

Table 2.9 (1/2) User Default Setting

No.	User Setting Items	Setting Selection	1 ODA	2 LTA	3 E-INT	4 E-GER	5 E-FRE	6 0-AUS	7 0-NZL	8 0-SIN	9 0-HNG	10 L-AG	10 IRL	11 DEN	13 SWE	Note
1	MCF (single-loc.)	ON/OFF	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	
2	MCF (multi-loc.)	ON/OFF	ON	ON	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	
3	ERR.REPORT (MCF.)	ON/OFF	ON	ON	OFF	ON	OFF	ON	ON	ON	OFF	OFF	OFF	ON	ON	
4	IMAGE IN MCF.	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
5	SENDER ID	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
6	MONITOR VOLUME	OFF/LOW/HIGH	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	
7	BUZZER VOLUME	LOW/MID/HIGH	MID	MID	MID	MID	MID	MID	MID	MID	MID	MID	MID	LOW	MID	
8	CLOSED NETWORK	OFF/ T/R / RX	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
9	TX MODE DEFAULT	STD/FINE/EX-FINE/PHOTO NORMAL/DARK/LIGHT	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	
10	T/F TIMER PRG.	20 sec/35 sec	35	35	20	35	20	35	35	35	35	20	20	20	20	
11	RING RESPONSE	1 ring/5 sec/10 sec/15 sec/20 sec	1 ring	1 ring	1 ring	1 ring	1 ring	1 ring	1 ring	1 ring	1 ring	1 ring	1ring	1 ring	1 ring	
12	DISTINCTIVE RING	OFF/ON/SET	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
13	PAPER SIZE	1st Tray=A4/LET./LGL13/LGL14 /EXEC/A5/A6/JISB5	LET	LET	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	A4	
14	USER LANGUAGE	LNG1/LNG2	LNG1	LNG1	LNG1	LNG2	LNG2	LNG1	LNG1	LNG1	LNG1	LNG1	LNG1	LNG2	LNG2	
15	INCOMING RING	OFF/ON/DRC	ON	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	ON	
16	REMOTE RECEIVE	OFF/00/11/22/33/...../88/99/**/##	OFF	OFF	OFF	OFF	OFF	OFF	**	OFF	OFF	OFF	OFF	**	11	
17	MEM./FEED SWITCH	MEMORY/FEEDER	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	
18	POWER SAVE MODE	ON/OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
19	ECM FUNCTION	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
20	REMOTE DIAGNOSIS	ON/OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	ON	
21	PC/FAX SWITCH	ON/OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
22	NO TONER MEM. RX	ON/OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON	
23	MEM. FULL SAVE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
24	CONTINIOUS TONE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
25	INSTANT DIALING	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
26	RESTRICT ACCESS	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
27	WIDTH REDUCTION	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
28	TONER SAVE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
29	CNG COUNT	1-5	1	1	1	1	1	1	1	1	1	1	1	1	1	
30	ISDN DIAL MODE	G4 MODE/G3 MODE	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	Only ISDN opt. Installed
31	SPEECH RECEIVE	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	Only ISDN opt. Installed
32	USB CONV. MODE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Only OKIOFFICE87
33	PAPER SIZE CHECK	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	Only OKIOFFICE87
34	PRINT JOB T.O.	5SEC/30SEC/5MIN	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	Only OKIOFFICE87

Table 2.9 (2/2) User Default Setting

No.	User Setting Items	Setting Selection	14 NOR	15 SUI	16 AUT	17 HOL	18 ITA	19 ESP	20 CHN	(21) Factory	Note
1	MCF (single-loc.)	ON/OFF	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	
2	MCF (multi-loc.)	ON/OFF	ON	ON	ON	ON	ON	OFF	ON	OFF	
3	ERR.REPORT (MCF.)	ON/OFF	ON	ON	ON	ON	OFF	ON	ON	OFF	
4	IMAGE IN MCF.	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
5	SENDER ID	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
6	MONITOR VOLUME	OFF/LOW/HIGH	OFF	LOW	LOW	LOW	HIGH	HIGH	LOW	HIGH	
7	BUZZER VOLUME	LOW/MID/HIGH	LOW	MID	MID	MID	HIGH	HIGH	MID	HIGH	
8	CLOSED NETWORK	OFF/ T/R / RX	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
9	TX MODE DEFAULT	STD/FINE/EX-FINE/PHOTO NORMAL/DARK/LIGHT	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	STD NOR	
10	T/F TIMER PRG.	20 sec/35 sec	35	35	35	20	35	20	35	35	
11	RING RESPONSE	1 ring/5 sec/10 sec/15 sec/20 sec	1ring	5sec	1ring	1ring	1ring	1ring	1 ring	1ring	
12	DISTINCTIVE RING	OFF/ON/SET	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
13	PAPER SIZE	1st Tray=A4/LET./LGL13/LGL14 /EXEC/A5/A6/JISB5	A4	A4	A4	A4	A4	A4	A4	LET	
14	USER LANGUAGE	LNG1/LNG2	LNG2	LNG2	LNG2	LNG2	LNG2	LNG2	LNG1	LNG1	
15	INCOMING RING	OFF/ON/DRC	ON	ON	ON	OFF	ON	OFF	ON	ON	
16	REMOTE RECEIVE	OFF/00/11/22/33/...../88/99/**/##	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
17	MEM./FEED SWITCH	MEMORY/FEEDER	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	MEM.	
18	POWER SAVE MODE	ON/OFF	ON	ON	ON	OFF	ON	OFF	ON	OFF	
19	ECM FUNCTION	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
20	REMOTE DIAGNOSIS	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	
21	PC/FAX SWITCH	ON/OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	
22	NO TONER MEM. RX	ON/OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	
23	MEM. FULL SAVE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
24	CONTINIOUS TONE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
25	INSTANT DIALING	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	
26	RESTRICT ACCESS	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
27	WIDTH REDUCTION	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
28	TONER SAVE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
29	CNG COUNT	1-5	1	1	1	1	1	1	1	1	
30	ISDN DIAL MODE	G4 MODE/G3 MODE	G4	G4	G4	G4	G4	G4	G4	G4	Only ISDN opt. Installed
31	SPEECH RECEIVE	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	Only ISDN opt. Installed
32	USB CONV. MODE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Only OKIOFFICE87
33	PAPER SIZE CHECK	ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	Only OKIOFFICE87
34	PRINT JOB T.O.	5SEC/30SEC/5MIN	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	30SEC	Only OKIOFFICE87

2.2.1.5 User's Functions Example

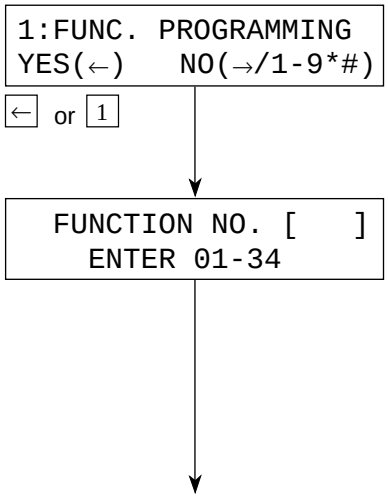
Note: The fonts displayed on the LCD operation panel may differ from fonts written this manual.

1) Function Program

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode.
  (In case of no message in memory)
- Press [←] key.
- Enter two-digit function number, then the display will show the set item corresponding to the number entered.
  If you want to set up all or several items starting with 01, then enter 01.

The display shows:



To an individual setting item.
(See Table 2.10)

Table 2.10 (1/4) User's Functions

Tap No.	Name of Function	The Display Shows
0 1	Message confirmation report (Single location)	01:MCF(SINGLE-LOC.) [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
0 2	Message confirmation report (Multiple locations)	02:MCF (MULTI-LOC.) [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
0 3	Error report	03:ERR. REPORT(MCF.) [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
0 4	Image in MCF.	04:IMAGE IN MCF. [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
0 5	Sender ID	05:SENDER ID [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
0 6	Monitor volume	06:MONITOR VOLUME [X] YES(←) NO(→) → Setting X: OFF → LOW → MID. ↑ ← ↵ HIGH ← H-MID.↵
0 7	Buzzer volume	07:BUZZER VOLUME [X] YES(←) NO(→) → Setting (Toggle) X: MID → HIGH → LOW ↑ ↵
0 8	Closed network	08:CLOSED NETWORK [X] YES(←) NO(→) → Setting X: T/R → RX → OFF ↑ ↵
0 9	TX mode default	09:TX MODE DEFAULT YES(←) NO(→) → Setting RESOLUTION & ORIGINAL Note 1:
1 0	Telephone/fax automatic switchover timer	10:T/F TIMER PRG. [X] YES(←) NO(→) → Setting (Toggle) X: 20SEC ⇆ 35SEC
1 1	Ring response time	11:RING RESPONSE [X] YES(←) NO(→) → Setting Note 2: X: 1RING → 05SEC → 10SEC → 15SEC ↑ ↵ 20SEC ↵
1 2	Distinctive ring	12:DISTINCTIVE RING [X] YES(←) NO(→) → Setting (Toggle) Note 2: X:OFF → ON → SET ↑ ↵

Table 2.10 (2/4) User's Functions

Tap No.	Name of Function	The Display Shows
1 3	Paper size	13:PAPER SIZE [X] YES(←) NO(→) → Setting Note 3 X: A4 → LET → LGL 13 → LGL 14 → JISB5 ← A6 ← A5 ← EXEC.
1 4	User language	14:USER LANGUAGE [X] YES(←) NO(→) → Setting X: ENG. ⇆ (Other)
1 5	Incoming ring	15:INCOMING RING [X] YES(←) NO(→) → Setting (Toggle) X: OFF → ON → DRC
1 6	Remote receive	16:REMOTE RECEIVE [X] YES(←) NO(→) OFF → 00 → 11 → 22 → 33 → 44 → 55 → 77 → 88 → 99 → ## ← **
1 7	Memory and feeder selection	17:MEM/FEEDER SW. [X] YES(←) NO(→) → Setting X: MEM. ⇆ FEED.
1 8	Power save mode (not available for ODA version)	18:POWER SAVE MODE [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
1 9	ECM function	19:ECM FUNCTION [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
2 0	Remote diagnosis	20:REMOTE DIAGNOSIS [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
2 1	PC/FAX switch	21:PC/FAX SWITCH [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON

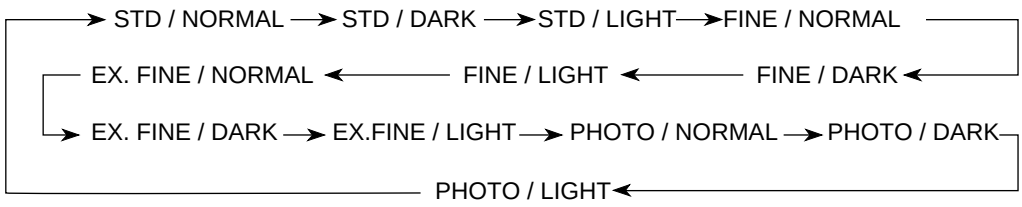
Table 2.10 (3/4) User's Functions

Tap No.	Name of Function	The Display Shows
2 2	No toner memory reception	22:NO TONER MEM. RX [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
2 3	Memory full save	23:MEM FULL SAVE [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
2 4	Continuous tone	24:CONTINUOUS TONE [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
2 5	Instant dialing	25:INSTANT DIALING [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
2 6	Restricted access	26:RESTRICT ACCESS [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
2 7	Width reduction	27:WIDTH REDUCTION [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
2 8	Toner save	28:TONER SAVE [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON
2 9	CNG count	29:CNG COUNT [X] YES(←) NO(→) Note 4 → Setting (Toggle) X: 1 → 2 → 3 → 4 → 5
3 0	ISDN DIAL MODE	30:ISDN DIAL MODE [X] YES(←) NO(→) Note 5 → Setting (Toggle) X: G3 ⇆ G4

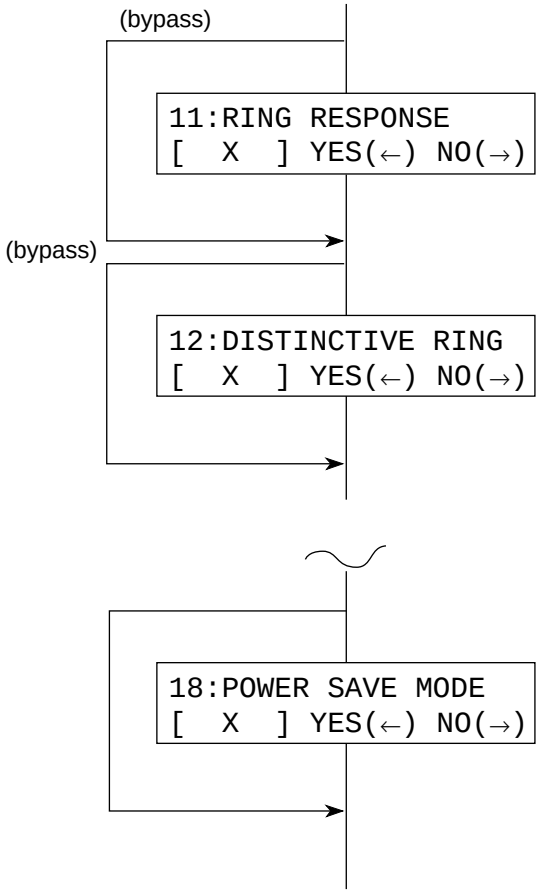
Table 2.10 (4/4) User's Functions

Tap No.	Name of Function	The Display Shows
3 1	Speech receive	31:SPEECH RECEIVE [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON Note 5
3 2	USB Conv. mode USB: Universal serial mode	32:USB CONV. MODE [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON Note 6
3 3	Paper size check	34:PAPER SIZE CHECK [X] YES(←) NO(→) → Setting (Toggle) X: OFF ⇆ ON Note 7
3 4	Print job time out	35:PRINT JOB T.O. [X] YES(←) NO(→) → Setting (Toggle) X: 5 sec → 30 sec → 5 min Note 7

Note 1: RESOLUTION & ORIGINAL of Tx mode defult setting can be selected by using [→] key.



2: When the service bit is set to "off" and the corresponding bit of XPARA of national code is set to "off", Ring response and/or Distinctive ring is bypassesd as follows:



3: EXEC., A5 or A6 are used when MFP function is valid.

4: For G4 option, skip this step.
This step is valid when Service Bit = ON.

5: "FUNC. NOT AVAIL" is displayed for 3 seconds by pressing the No key if a MUPIS I/F error occurs only when G4 option is mounted.

6: OKIOFFICE87 only.

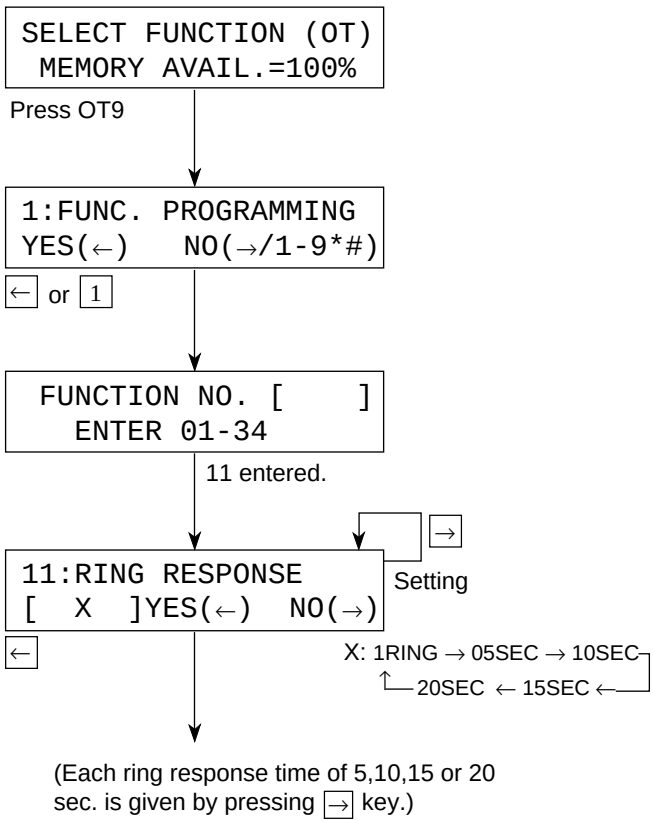
7: USB CONV. MODE = ON only.

2) Ring response time

Before specifying the ring response time, set the service bit on following the operations shown in 2.2 (1/8). (Service Bit Setting).

Operations: **The display shows:**

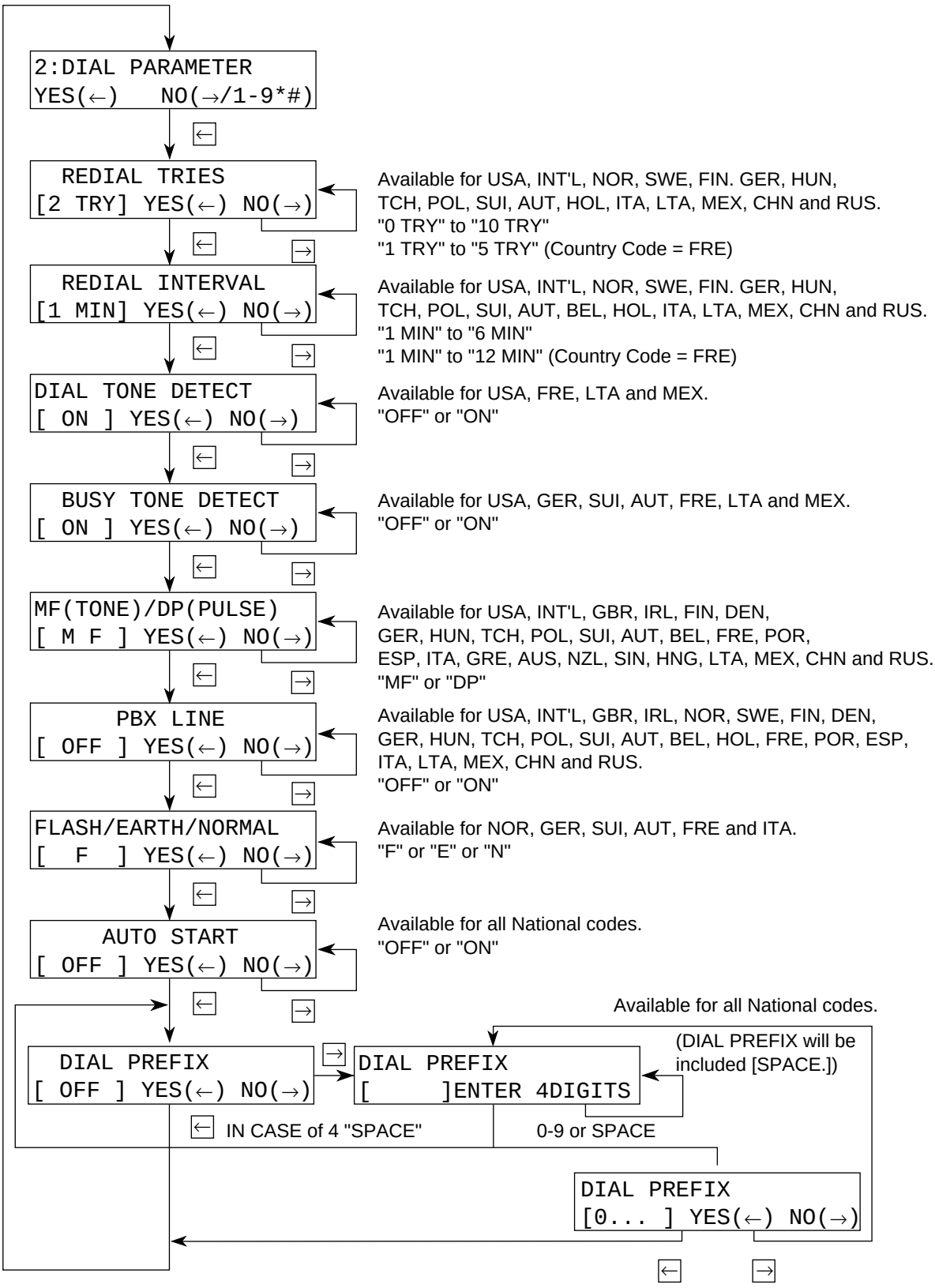
- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode. (In case of no message in memory)
- Press [←] key enter using the ten-key pad.
- Enter 11 using the ten-key pad.
- Press [→] key until the setting you want is displayed, then press [←] key.



(Each ring response time of 5,10,15 or 20 sec. is given by pressing [→] key.)

3) Dial parameters (In case the service bit is "OFF".)

To get the "DIAL PARAMETER" message on the display, perform the same operetion as Table 2.11.(Dial parammeters settings)


2:DIAL PARAMETER
YES(←) NO(→/1-9*#)
REDIAL TRIES
[2 TRY] YES(←) NO(→)
Available for USA, INT'L, NOR, SWE, FIN. GER, HUN, TCH, POL, SUI, AUT, HOL, ITA, LTA, MEX, CHN and RUS.
"0 TRY" to "10 TRY"
"1 TRY" to "5 TRY" (Country Code = FRE)
REDIAL INTERVAL
[1 MIN] YES(←) NO(→)
Available for USA, INT'L, NOR, SWE, FIN. GER, HUN, TCH, POL, SUI, AUT, BEL, HOL, ITA, LTA, MEX, CHN and RUS.
"1 MIN" to "6 MIN"
"1 MIN" to "12 MIN" (Country Code = FRE)
DIAL TONE DETECT
[ON] YES(←) NO(→)
Available for USA, FRE, LTA and MEX.
"OFF" or "ON"
BUSY TONE DETECT
[ON] YES(←) NO(→)
Available for USA, GER, SUI, AUT, FRE, LTA and MEX.
"OFF" or "ON"
MF(TONE)/DP(PULSE)
[M F] YES(←) NO(→)
Available for USA, INT'L, GBR, IRL, FIN, DEN, GER, HUN, TCH, POL, SUI, AUT, BEL, FRE, POR, ESP, ITA, GRE, AUS, NZL, SIN, HNG, LTA, MEX, CHN and RUS.
"MF" or "DP"
PBX LINE
[OFF] YES(←) NO(→)
Available for USA, INT'L, GBR, IRL, NOR, SWE, FIN, DEN, GER, HUN, TCH, POL, SUI, AUT, BEL, HOL, FRE, POR, ESP, ITA, LTA, MEX, CHN and RUS.
"OFF" or "ON"
FLASH/EARTH/NORMAL
[F] YES(←) NO(→)
Available for NOR, GER, SUI, AUT, FRE and ITA.
"F" or "E" or "N"
AUTO START
[OFF] YES(←) NO(→)
Available for all National codes.
"OFF" or "ON"
Available for all National codes.
DIAL PREFIX
[OFF] YES(←) NO(→)
DIAL PREFIX
[ ]ENTER 4DIGITS
(DIAL PREFIX will be included [SPACE.])
IN CASE of 4 "SPACE"
0-9 or SPACE
DIAL PREFIX
[0...] YES(←) NO(→)

The following table can be set depending on the National codes even if the service bit is "off".

Table 2.11 Dial parameters setting if the service bit "OFF"

NATIONAL CODE	USA	INT'L	GBR	IRL	NOR	SWE	FIN	DEN	GER	HUN	TCH	POL
Redial tries	○	○			○	○	○		○	○	○	○
Redial interval	○	○			○	○	○		○	○	○	○
Dial tone detect	○											
Busy tone detect	○								○			
MF/DP	○	○		○			○	○	○	○	○	○
Pulse dial rate												
Pulse make ratio												
Pulse dial type												
MF duration												
PBX line	○	○	○	○	○	○	○	○	○	○	○	○
Flash/Earth/Normal					○				○			
Auto start	○	○	○	○	○	○	○	○	○	○	○	○
Dial	○	○	○	○	○	○	○	○	○	○	○	○

NATIONAL CODE	SUI	AUT	BEL	HOL	FRE	POR	ESP	ITA	GRE	AUS	NZL	SIN	HNG	LTA	MEX	CHN	RUS
Redial tries	○	○		○				○						○	○	○	○
Redial interval	○	○	○	○				○						○	○	○	○
Dial tone detect	○	○												○	○	○	
Busy tone detect	○	○			○									○	○	○	
MF/DP	○	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○
Pulse dial rate																	
Pulse make ratio																	
Pulse dial type																	
MF duration																	
PBX line	○	○	○	○	○	○	○	○						○	○	○	○
Flash/Earth/Normal	○	○			○			○									
Auto start	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Dial	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

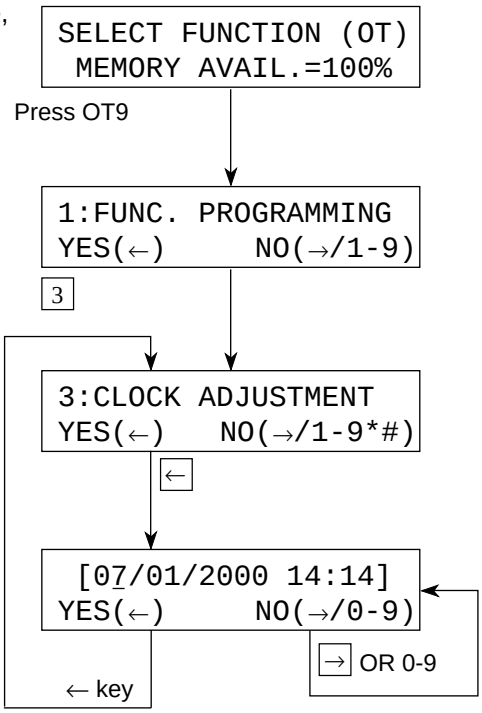
Note: The blank in the table is not indicated on the LCD.

2.2.1.6 Clock Adjustment

Operations:

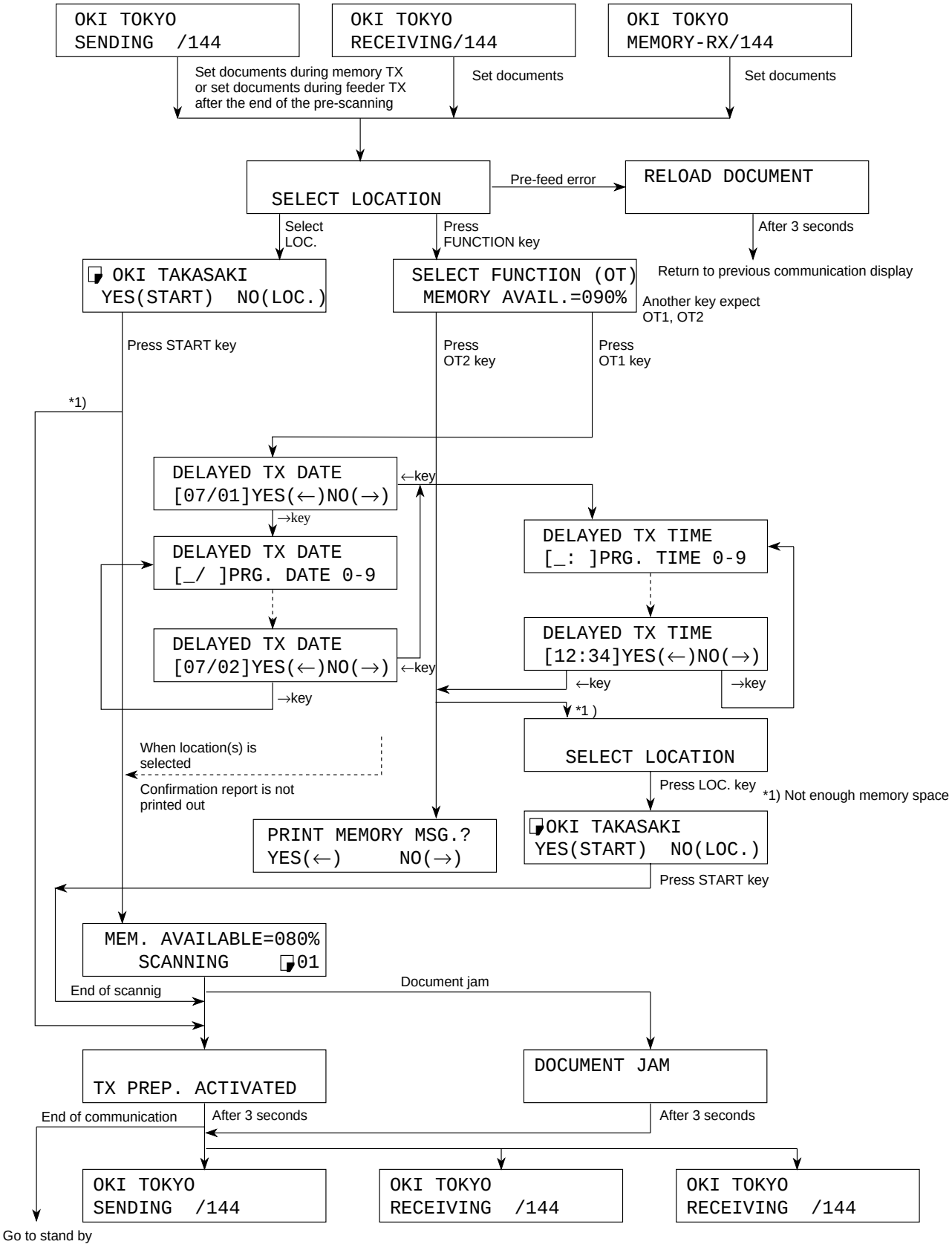
- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode. (In case of no message in memory)
- Enter 3 using the ten-key pad.
- Press ← key.
- Enter date and time by using the ten-key pad (0 to 9, *, # keys).

The display shows:



Note: Data outside 1996 to 2095 cannot be registered.

2.2.1.7 Dual Access Operation



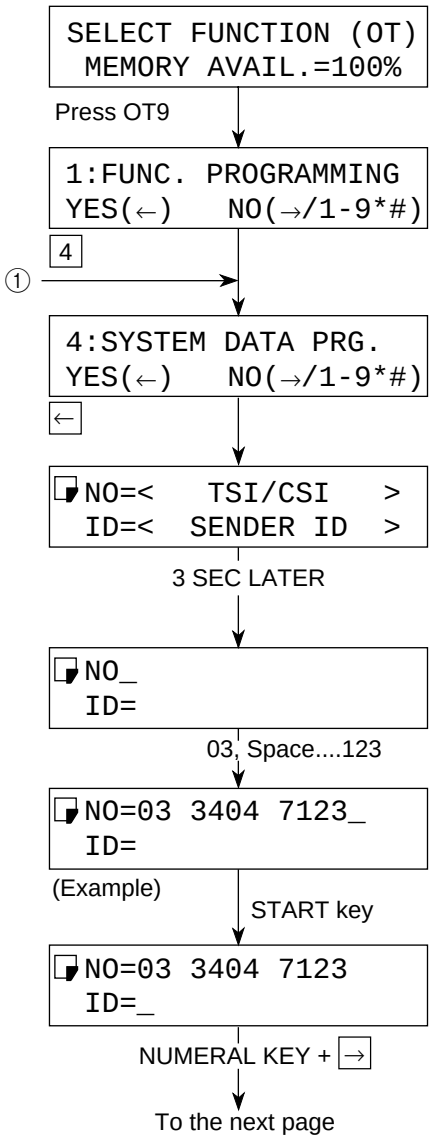
2.2.1.8 System Data Programming

- TSI/CSI (Defalut: Blank)
- Registration of sender ID (Defalut: Blank)
- Registration of telephone number for the call-back message (Defalut: Blank)

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode.
  (In case of no message in memory)
- Enter 4 using the ten-key pad.
- Press ← key.

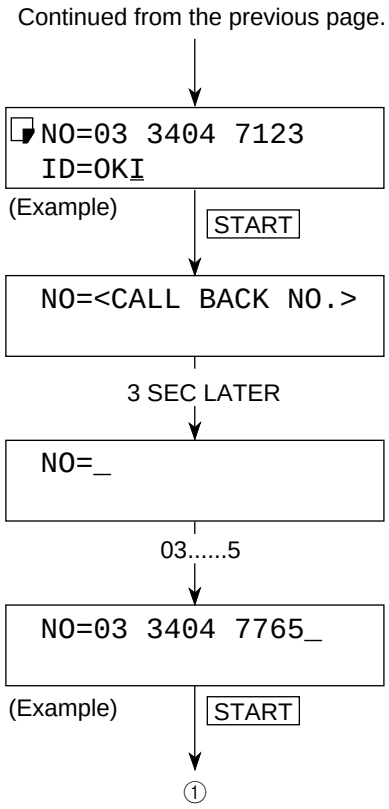
The display shows:



Note 1: Use the UNIQUE key to input special symbols.
2: When 16 digits or more is registered, the high-order 16 digits are displayed (TSI, CSI, ID or CBM)

Operations:

The display shows:



- Press START key.

- Press START key.

2.2.1.9 Dial Parameters Settings

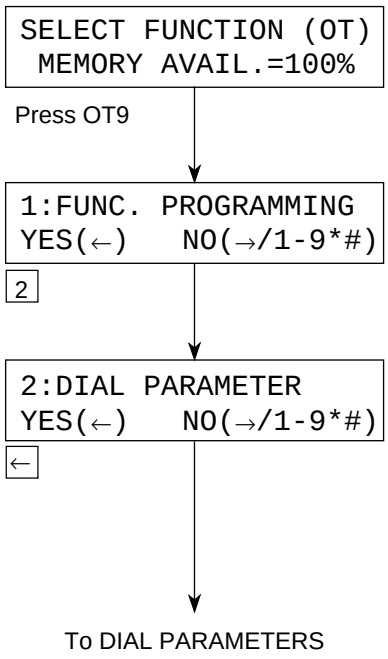
(1) Procedure

The following shows the case in which the service bit is on.

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode. (In case of no message in memory)
- Enter 2 using the ten-key pad.
- Press [←] key.

The display shows:



*1 Not all of the following dial parameters are released to the users (depending on National codes and if the Service bit is OFF)

The display shows:

Continued from the previous page.

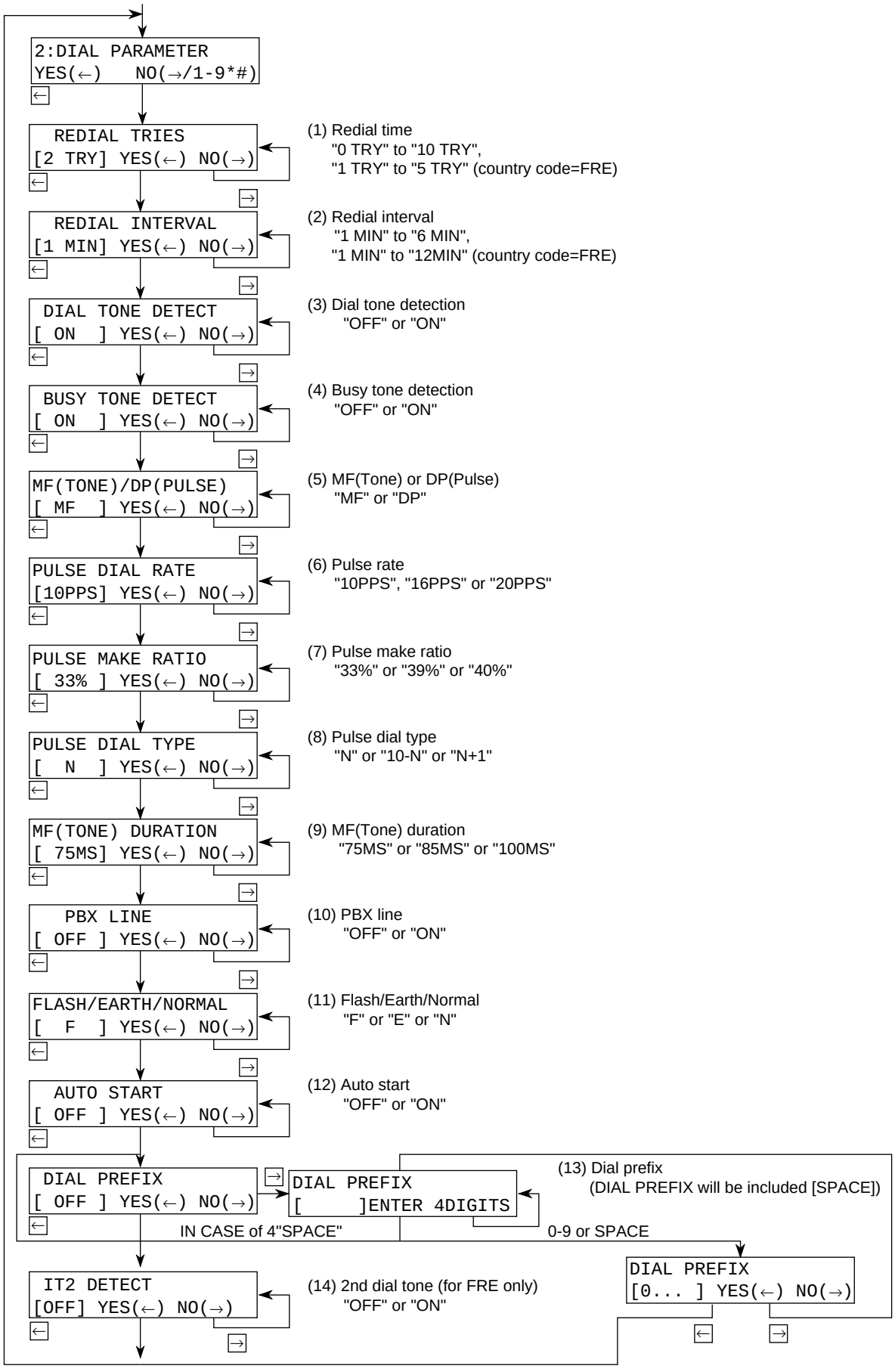


Table 2.12 Default Settings of Dial Parameters

No.	User Setting Items	Setting Selection	COUNTRY CODE																												
			1 USA	2 INT'L	3 GBR	4 IRL	5 NOR	6 SWE	7 FIN	8 DEN	9 GER	10 HUN	11 TCH	12 POL	13 SUI	14 AUT	15 BEL	16 HOL	17 FRE	18 POR	19 ESP	20 ITA	21 GRE	22 AUS	23 NZL	24 SIN	25 HNG	26 LTA	27 MEX	28 CHN	29 RUS
1	REDIAL TRIES	0 - 10 TRIES	3	3	2	2	5	10	3	5	10	10	2	2	10	10	3	2	2	2	2	2	2	2	2	5	2	3	3	3	3
2	REDIAL INTERVAL	1 - 6 min	3	3	3	3	2	3	3	3	1	1	3	3	1	1	3	3	6	3	3	3	3	3	3	3	3	3	3	3	3
3	DIAL TONE DETECT	ON/OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	ON
4	BUSY TONE DETECT	ON/OFF	ON	ON	ON	OFF	ON	ON	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
5	MF (TONE)/DP (PULSE)	DP/MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	DP	MF	DP	MF	MF	MF	MF	MF	DP	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
6	PULSE DIAL RATE	10 PPS/16 PPS/ 20 PPS	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
7	PULSE MAKE RATIO	33%/39%/40%	39%	33%	33%	33%	33%	39%	39%	39%	40%	33%	39%	33%	40%	40%	33%	39%	33%	33%	33%	39%	39%	33%	33%	33%	33%	39%	39%	33%	33%
8	PULSE DIAL TYPE	N/10-N/N+1	N	N	N	N	N	N+1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	10-N	N	N	N	N	N	N
9	MF (TONE) DURATION	75 ms/85 ms/100 ms	100	85	85	85	75	85	85	100	85	100	100	100	85	85	85	100	75	85	85	85	100	85	85	85	85	100	100	85	85
10	PBX LINE	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
11	FLASH/EARTH/NORMAL	NORMAL/FLASH/ EARTH	N	N	N	N	N	N	N	N	EARTH	N	N	N	FLASH	EARTH	N	N	FLASH	N	N	N	N	N	N	N	N	N	N	N	N
12	AUTO START	ON/OFF	ON	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	OFF
13	DIAL PREFIX	OFF/(max. 4 digits)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0...	OFF	OFF	OFF	0...	0...	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
XPARAD [0]			f8	c8	08	08	c0	c0	c8	08	d8	c8	c8	c8	d8	d8	48	c0	18	08	08	c8	08	08	08	08	08	f8	f8	f8	c8
XPARAD [1]			58	58	58	58	78	58	58	58	78	58	58	58	78	78	58	58	78	58	58	78	18	18	18	18	18	58	58	58	58

Note: User settings are possible for items without mesh.

Table 2.13 Dial Parameters Settings

No.	Item	Specifications
	Dial parameters	
01	Redial tries	Switches on the re-dial times to meet the regulations of the installed country. 0 to 10 tries (in one-try steps) 1 to 5 tries for FRE.
02	Redial interval	Switches on the re-dial intervals to meet the regulations of installed country. 1 to 6 minutes (in one-minute steps) 1 to 12 minutes for FRE.
03	Dial tone detect	Selects the dial tone detection. ON/OFF selectable. ON: Enable OFF: Disable
04	Busy tone detect	Selects the busy tone detection. ON/OFF selectable. ON: Enable OFF: Disable
05	MF (TONE) or DP (Pulse)	Selects dialling by multi-frequency or dial pulse.
06	Pulse dial rate	Selects the dialling pulse rates for the line. 10 pps/16 pps/20 pps selectable.
07	Pulse make ratio	Selects pulse dial rate. 33%/39%/40% GER, SUI, AUT = 40%
08	Pulse dial type	Selects pulse dial type. Normal(N)/10-N/N+1
09	MF (Tone) duration	Selects MF (Tone) duration. 75/85/100 ms selectable.
10	PBX line	Selects PBX line. ON/OFF selectable. ON: PBX line OFF: PSTN
11	Flash/Earth/Normal	Selects the PBX type to meet the exchange requirements. NORMAL/EARTH/FLASH selectable. (PBX line origination types)
12	Auto start	Enables or disables the function of dialing without pressing the START key in one-touch dial and 2-digit auto dial modes. ON: Enable OFF: Disable
13	Access digit	Prefix dialing digits with which PBX connects the fax to the public line. OFF/max. 4digit(s) selectable. Digit: Enable OFF: Disable

2.2.1.10 Off-line Tests

(1) Purpose

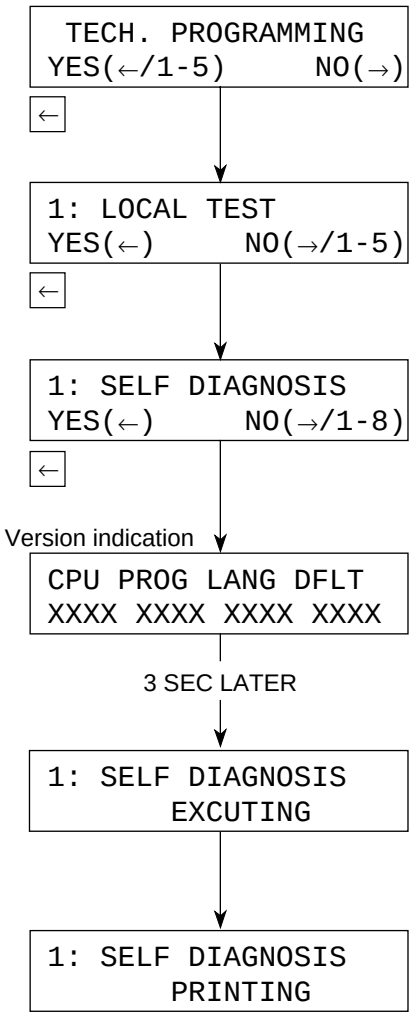
Activate self-diagnosis which includes:
- Print test
- CPU-ROM version printing
- CPU-RAM check
- PROG version printing
- LANGUAGE version printing
- DEFAULT version printing
- RAM check
- RAM check (memory board: optional)

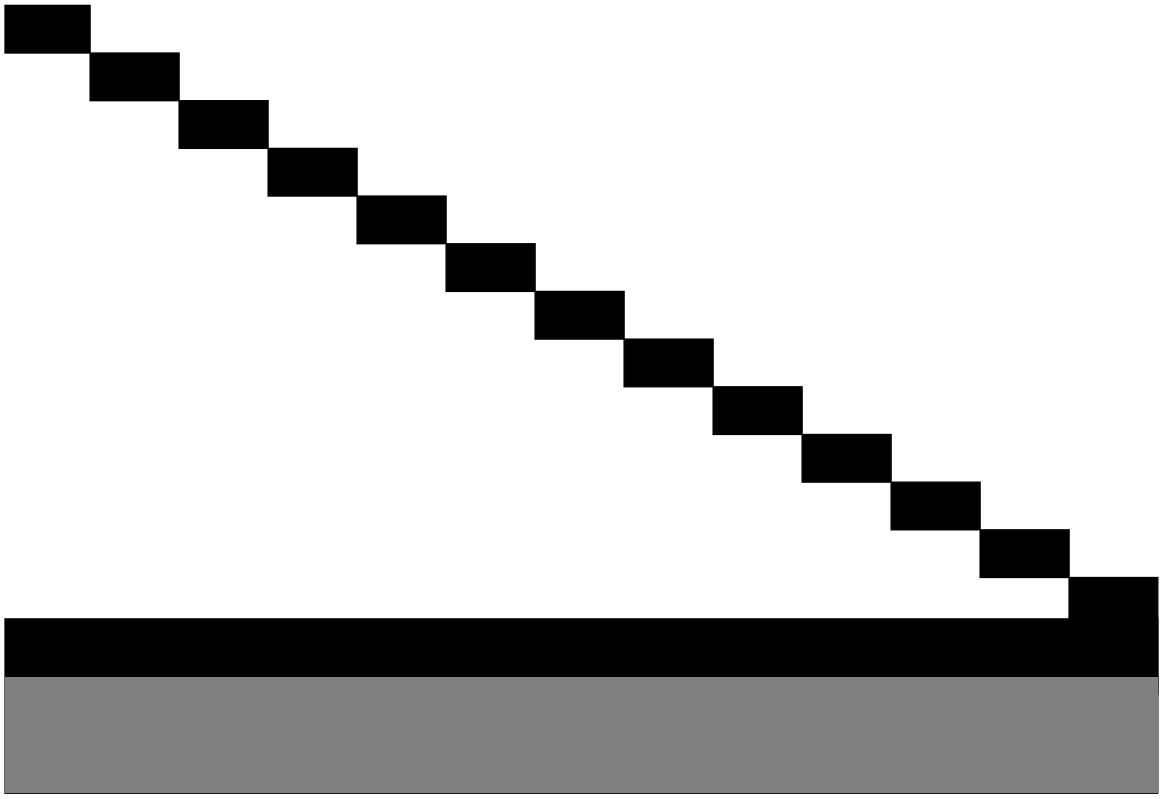
(2) Procedure

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and COPY key twice in the standby mode. (In case of no message in memory)
- Press ← key.
- Press ← key.
- Press ← key for cheking and test printing. (An example of printed data is shown in Figure 2.7)

The display shows:





```
CPU-ROM  VERSION  aaaa
         HASH     OK   hhhh
CPU-RAM           OK
PROGRAM  VERSION  aaaa
         HASH     OK   hhhh
LANGUAGE VERSION  aaaa
         HASH     OK   hhhh
DEFAULT  VERSION  aaaa
         HASH     OK   hhhh
RAM1     4M       OK                          *1
RAM2              OK
DEFAULT TYPE      01   03/03/2000  12:00
DEVICE ID         MFG:OKI DATA CORP;          *2
                  MDL:FX-046FAX;              *2
                  DES:OKI FX-046FAX;          *2
OPT-RAM  4M       OK                          *3
ISDN BOARD        OK
CPU-ROM  VERSION  aaaa
         HASH     OK   hhhh
CPU-RAM           OK
PROGRAM  VERSION  aaaa
         HASH     OK   hhhh
RAM      2M       OK
DPRAM    2K       OK
```

a: Alphabet and digit
h: Hexadecimal numeral
n: Digit

Figure 2.7 Printed Data of Self-diagnosis Print Test (Example)

2.2.1.11 On-line Tests

1. Transmission

(1) Load documents

(2) Make sure that

- The loaded documents are fed in automatically.
- The STD and NORMAL lamps light.
- The display shows SELECT LOCATION.

(3) Dial the telephone number of the remote machine by the ten-key pad.

(4) Make sure that the telephone number of the remote machine is shown on the display.

(5) Press the START button.

(6) Typical message transmission flow is described in Figure 2.8.

2. Reception

(1) Use another machine for dialling.

(2) Make sure that

- The display shows AUTO REC. START.
- The message is automatically received.

(3) Typical message reception flow is described in Figure 2.9.

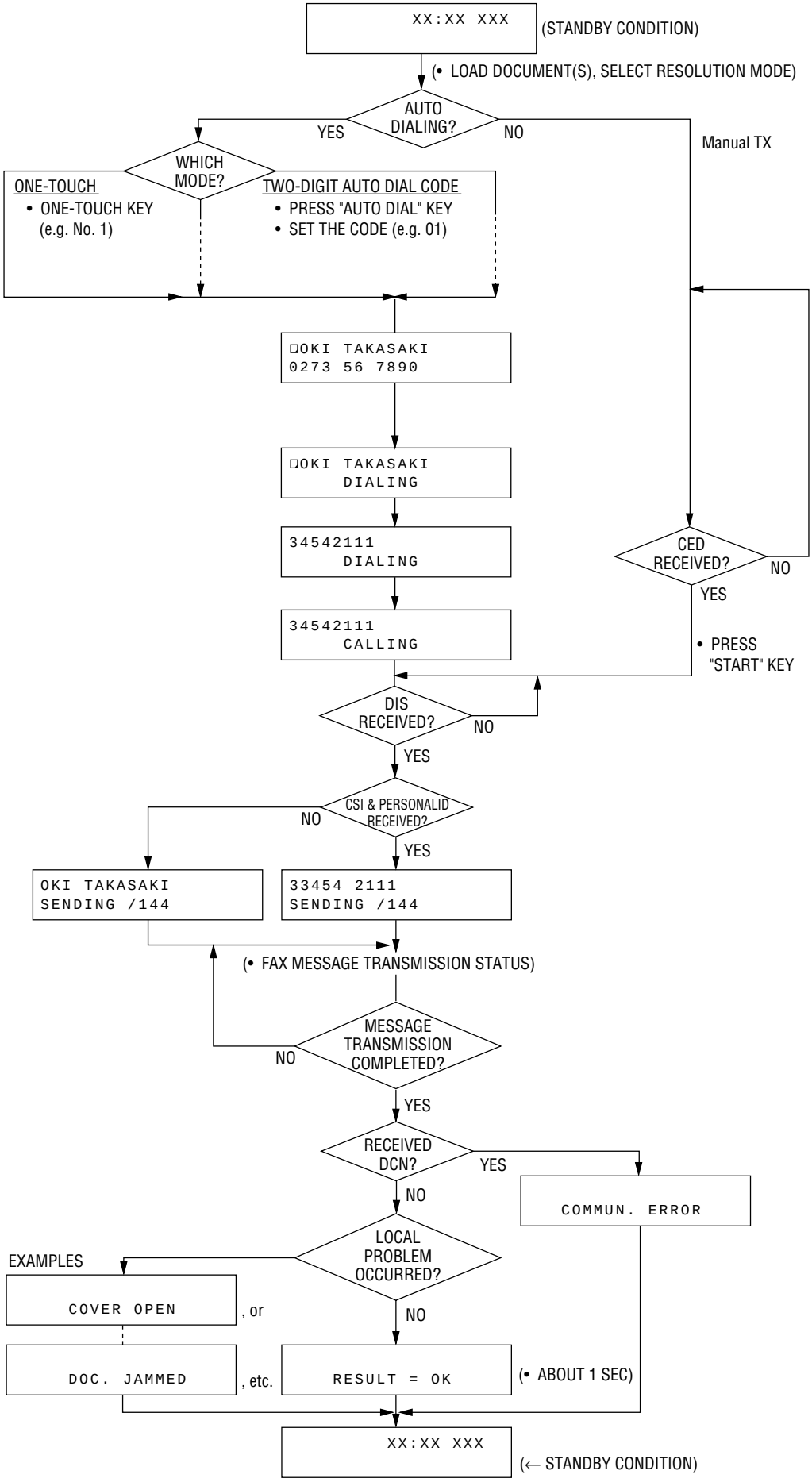


Figure 2.8 Typical Transmission Flow

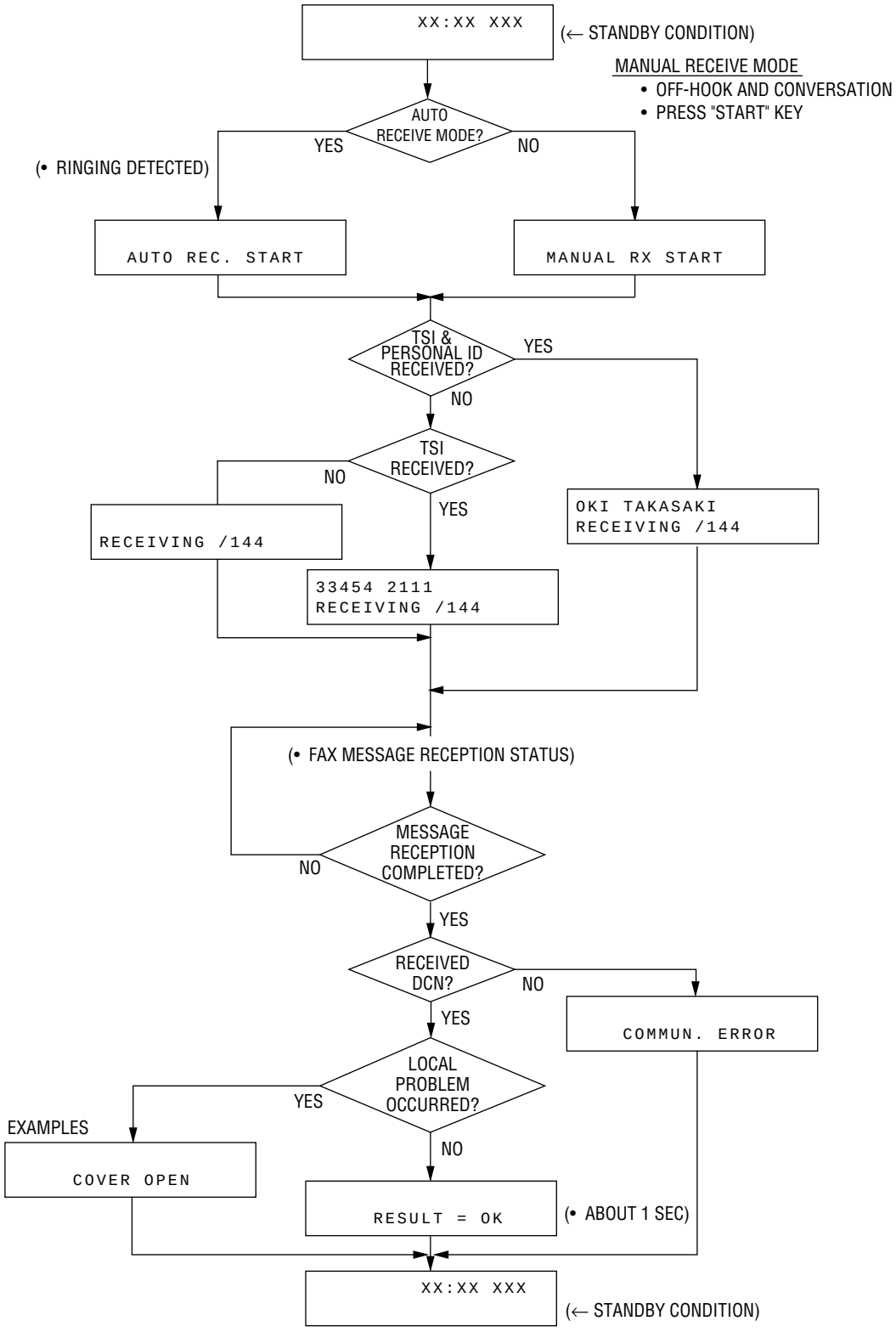


Figure 2.9 Typical Reception Flow

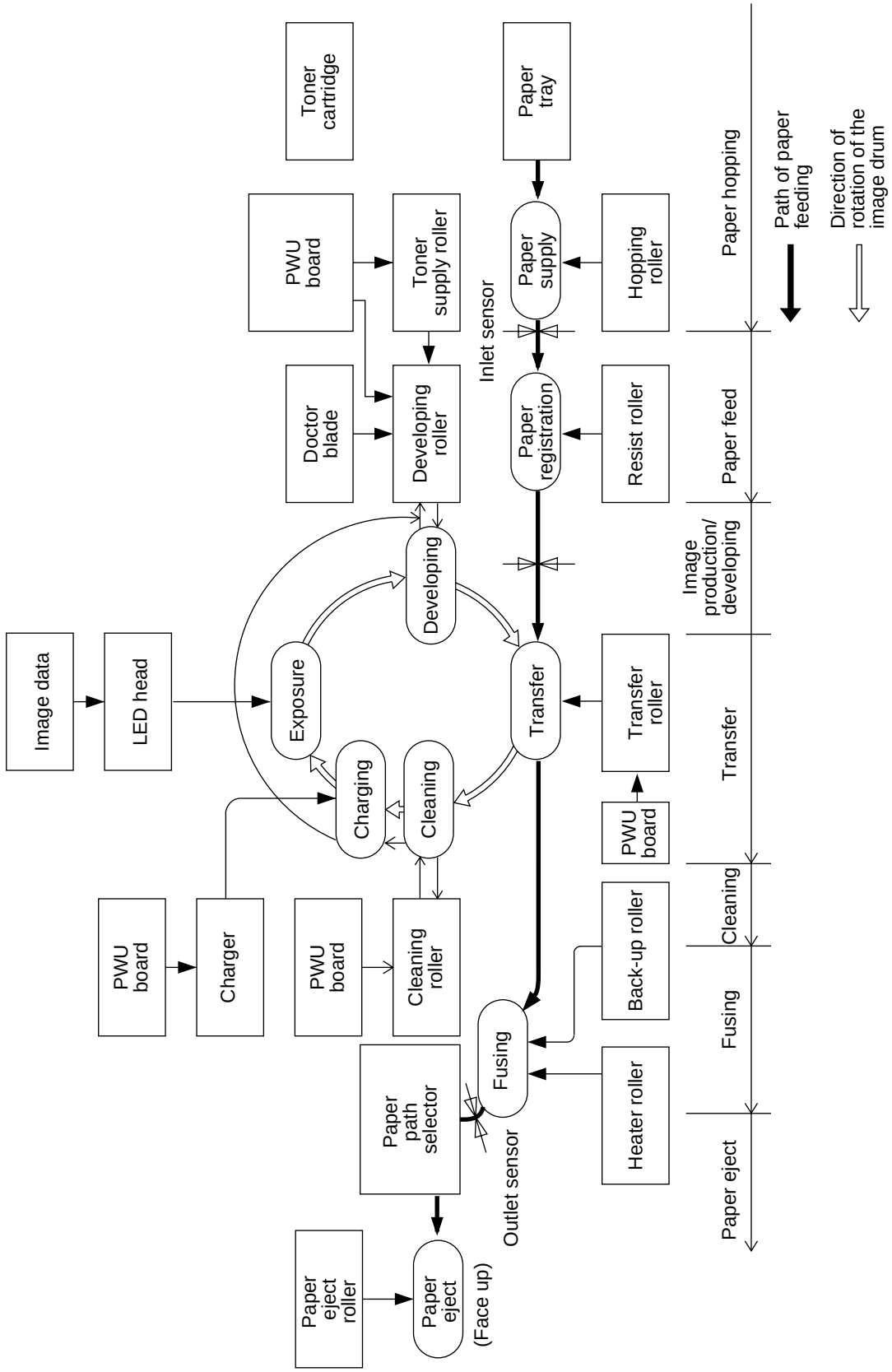
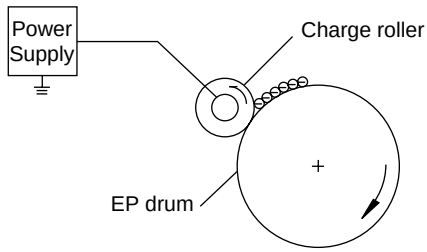
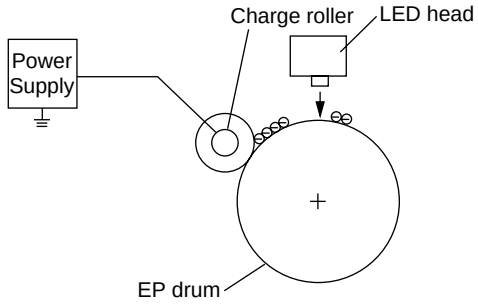
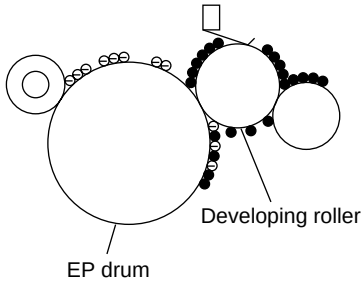


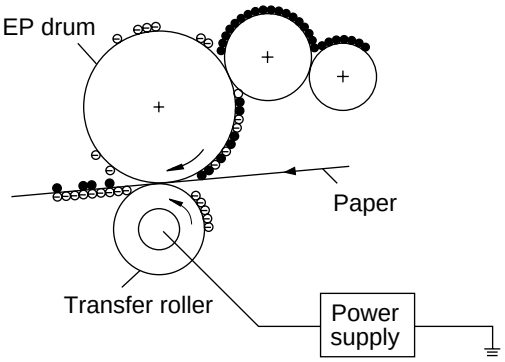
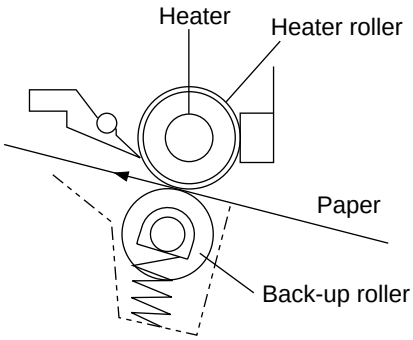
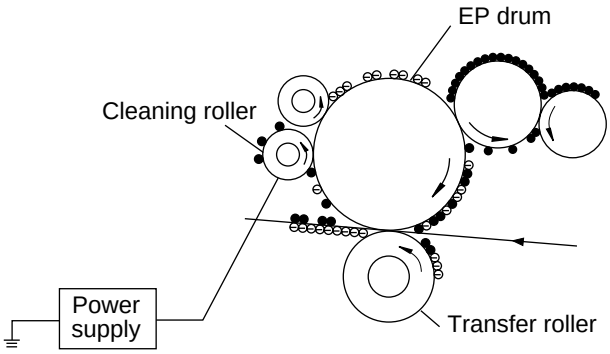
Figure 3.1 Electro-photographic Process Flow

3.1 Fundamentals of the Electro-Photographic Process

The electro-photographic process involves six sub-processes:
(1) Charging (2) Exposure (3) Development (4) Transfer (5) Fusing (6) Cleaning

Outline of each process is explained below.

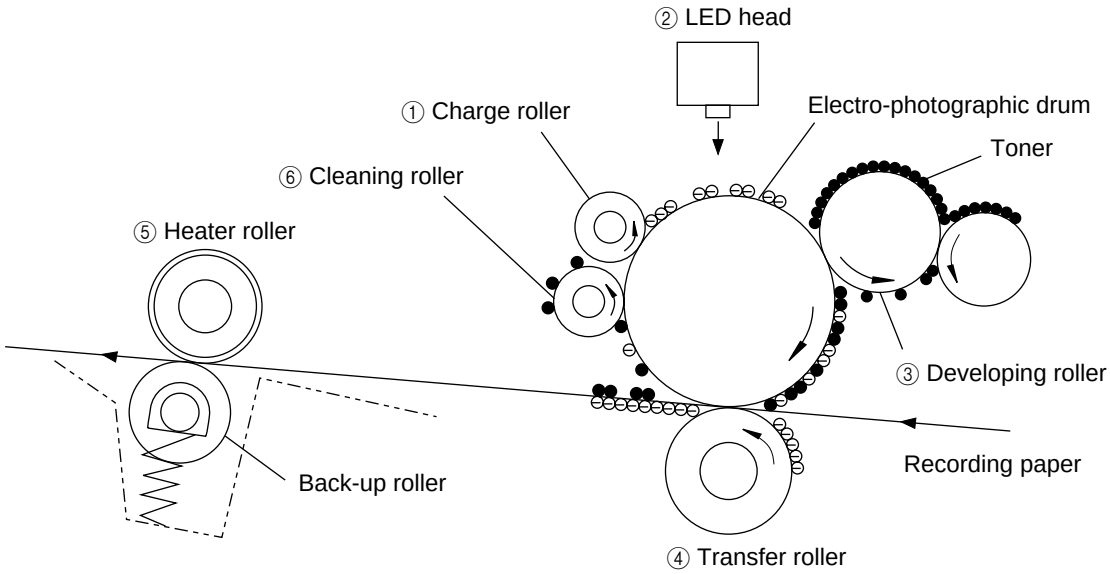
Process	Illustration	Description
1 Charging		The surface of the electro-photographic Image drum is uniformly charged with negative charges by applying a negative voltage to the charge roller. When the applied DC voltage exceeds a threshold value, charging of the drum begins.
2 Exposure		Light emitted from the LED head irradiates the negatively charged surface. The potential of the irradiated part of the Image drum surface is raised, so that an electrostatic latent image associated with the print image is formed.
3 Development		Toner is attracted to the exposed part (high-potential part) of the Image drum at the contact between the Image drum and the developing roller, making the electrostatic latent image visible. At the same time, the residual toner on the Image drum is attracted to the developing roller by static electricity.

Process	Illustration	Description
4 Transfer		The recording paper is placed over the Image drum surface and a positive charge, opposite in polarity to the toner, is applied to the reverse side of the paper from the transfer roller. The toner is attracted by the positive charge and is transferred to the paper. The toner charged negative that is attracted to the Image drum surface is transferred to the upper side of the recording paper by the positive charge on the lower side of the paper.
5 Fusing		The unfused toner image is fused on the paper under heat and pressure as it passes between the heater roller and the back-up roller.
6 Cleaning		Residual toner on the Image drum is attracted to the cleaning roller temporarily by static electricity on the Image drum surface.

3.2 Actual Electo-photographic Process

The electro-photographic process consists of six essential processes.

The following Figure 3.2 provides a general description.



* Process:

① : Charging
② : Exposure
③ : Developing
④ : Transfer
⑤ : Fusing
⑥ : Cleaning

Figure 3.2 Actual EP Process

3.3 Boards and Units

3.3.1 Boards and Units

The following one board, Main control board and three units constitute the facsimile transceiver machine.

• Main control board	MCNT:	(46F: OKIFAX4550, R46: OKIOFFICE87)
• Network control unit board	NCU:	(INU/EN9)
• Operation panel assembly unit	OPE:	(O4W)
• Power supply unit	POW UNIT:	(MPW1446; 230V/MPW1546; 120V, P2H, P6L)
• G4 option board	G4N	
• Printer unit		

Figure 3.3 shows the related drawing of the facsimile transceiver.

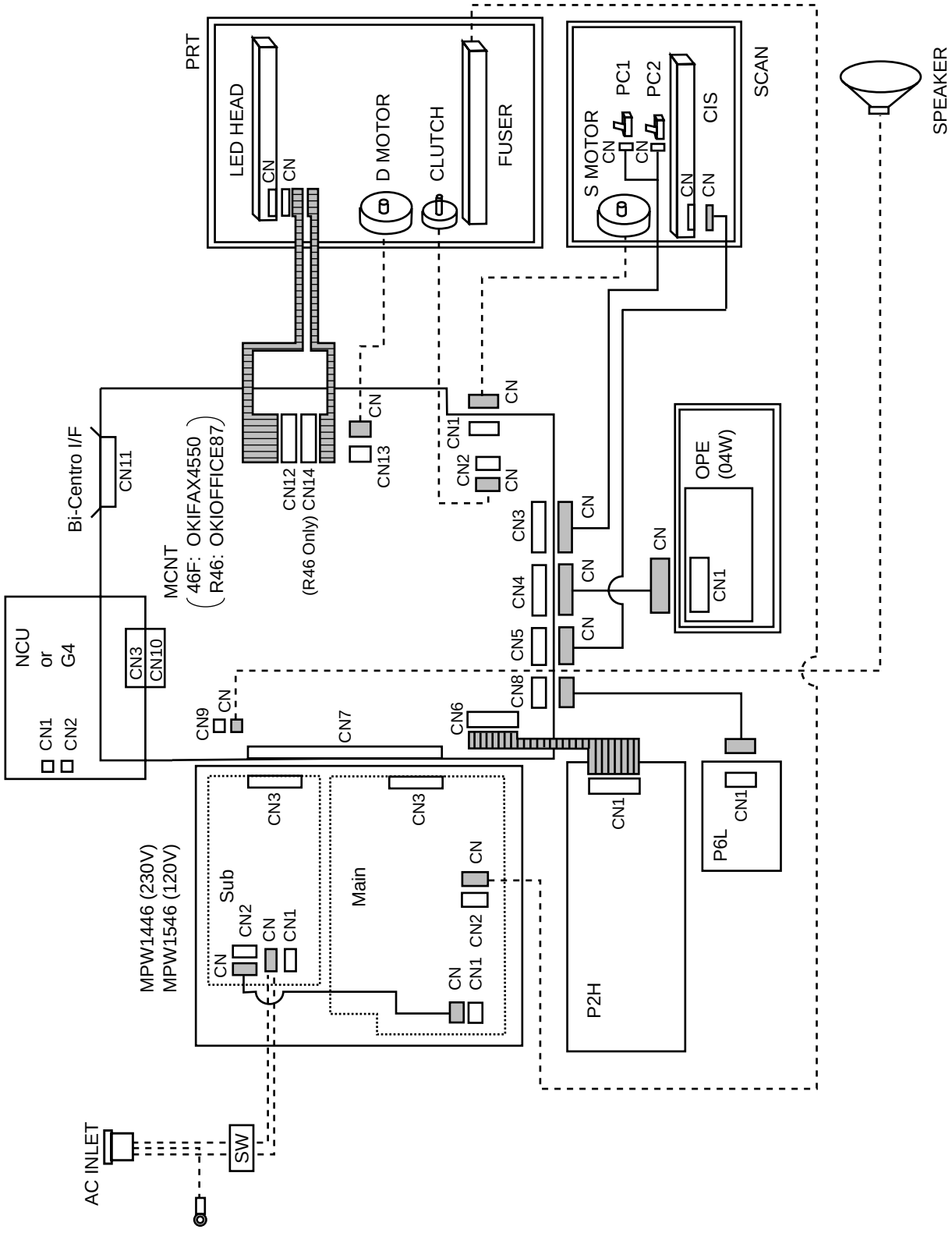
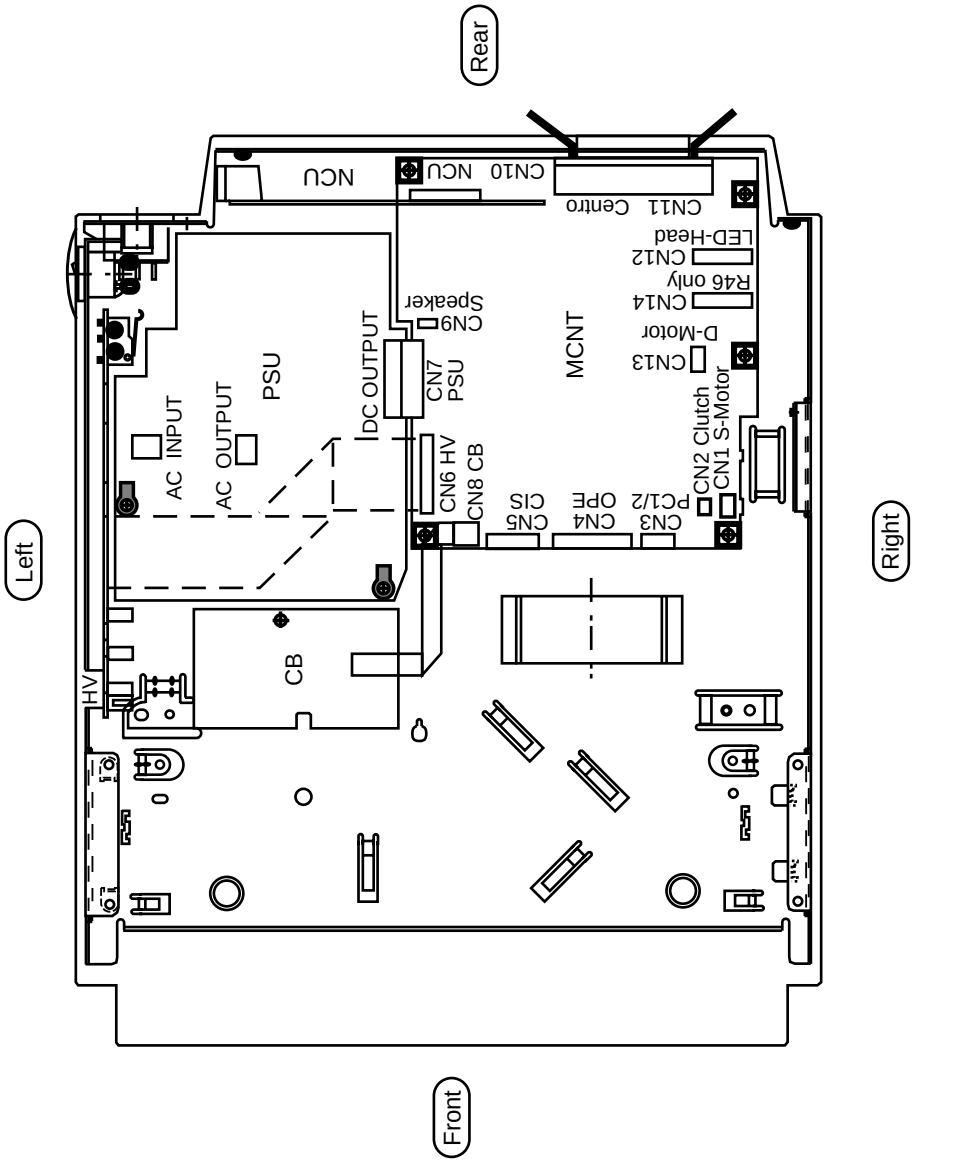


Figure 3.3 Related Drawing



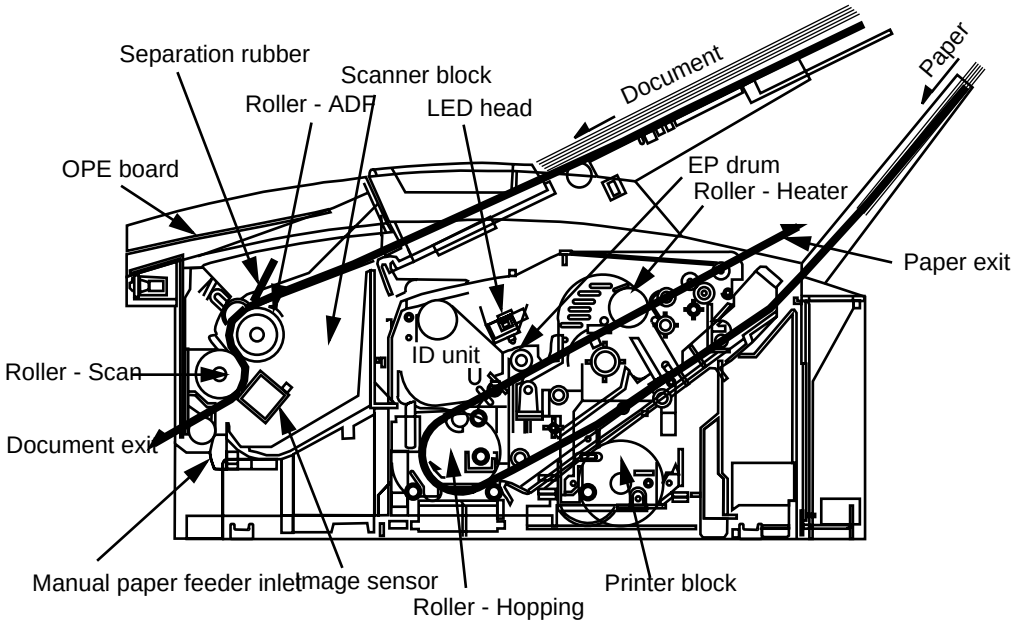


Figure 3.4 Overall Dimension and Mechanical Structure

4. MECHANICAL DISASSEMBLY AND REASSEMBLY

General

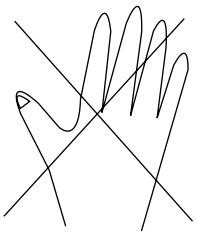
The section explains the procedures for replacement of parts, assemblies, and units in the field. Only the disassembly procedures are explained here. For reassembly, reverse the disassembly procedure.

4.1 Precautions for Parts Replacement

DANGER

Do Not
Touch !

HIGH VOLTAGE



You may be subjected to high-voltage electric shock by touching the following parts without an insulating material:

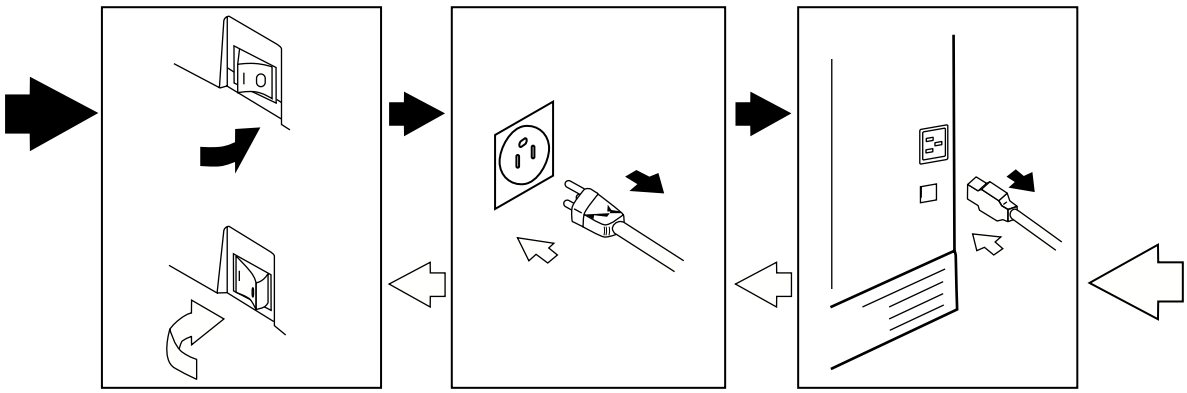
a. High-voltage unit PC board
b. Low-voltage PC board
c. Contact ass'y
d. Power supply unit

* The high voltage risk may continue for about 3 days after power-off.
* Never touch the power supply unit pattern.

(1) Before starting to replace parts, remove the AC cord.

(a) Remove the AC cord in the following sequence:
1. Turn off ("o") the power switch of the machine.
2. Disconnect the AC inlet plug of the AC cord from the AC receptacle.
3. Disconnect the line cable from the machine.

(b) Reconnect the machine in the following procedure:
1. Connect the AC cord and line cable to the machine.
2. Connect the AC inlet plug to the AC receptacle.
3. Turn on ("I") the power switch of the machine.



(2) Do not try to disassemble as long as the facsimile is operating normally.

(3) Do not remove unnecessary parts: Try to keep disassembly to a minimum.

(4) When disassembling, follow the prescribed sequence. Otherwise, parts may be damaged.

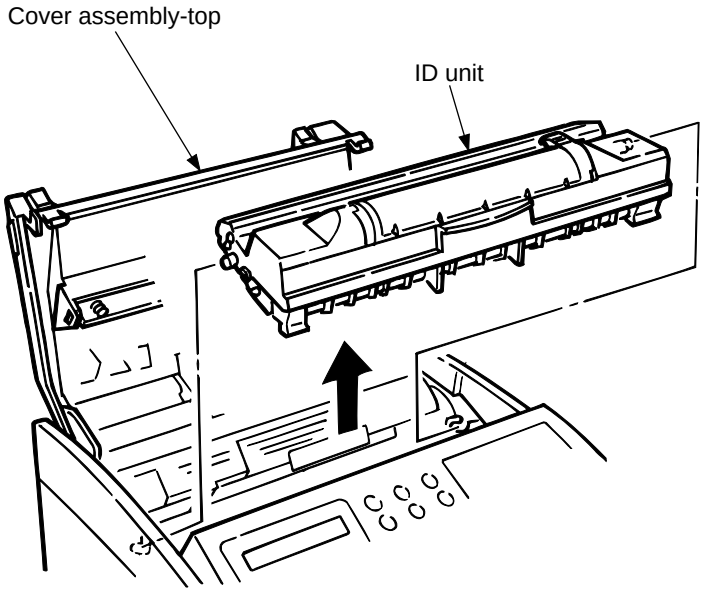
(5) Since screws and small parts are likely to be lost, they should temporarily be attached to their original positions.

(6) When handling items such as printed circuit boards, do not wear gloves that are likely to generate static electricity.

(7) Using a wrist band connected to the ground will protect semiconductors on printed circuit boards from damage by the static electricity.

(8) Do not place printed circuit boards directly on the equipment or on the floor.

(9) Remove the I/D unit (image drum unit)
• Open the cover assembly-top by raising, then take out the I/D unit from the equipment.



Caution: Do not expose the I/D unit to direct sunlight. To protect the I/D unit against room lights, cover it with A4-size paper or the like.

Board or Part	Adjustment
(a) NCU board	DIP switches to be placed in the same position as on the removed board. Refer to Chapter 8.

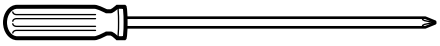
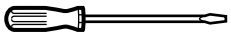
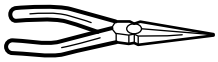
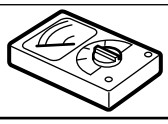
Note: The DIP switches setting is subject to change by PTT parameters.
EN9 and INU board (Except for USA/Canada version)

(b)	LED print head	When the rank marking of the replaced LED print head (new part) is the same as that of the used LED print head (old part), you do not always have to set the LED print head strobe time by the technical function No. 26. (Refer to Chapter 5).

4.2 Tools

Table 4.1 shows the tools required for the replacement of parts such as circuit boards and mechanical units.

Table 4.1 Tools

No.	Service tools		Q'ty	Remarks
1		Philips screw driver (L)	1	
2		Philips screw driver (M)	1	
3		Flat screw drivers (S)	1	
4		Philips screw driver (S)	1	
5		Radio pliers	1	
6		Nippers	1	
7		Multimeter	1	Short-ciucuit test

4.3 How to Disassemble and Reassemble

This section explains how to disassemble and reassemble the fax.

- Figure 4.1 shows the disassembly procedure flow as generalization.
- The detailed disassembly procedure is explained from sub-section 4.3.1 to 4.3.18.

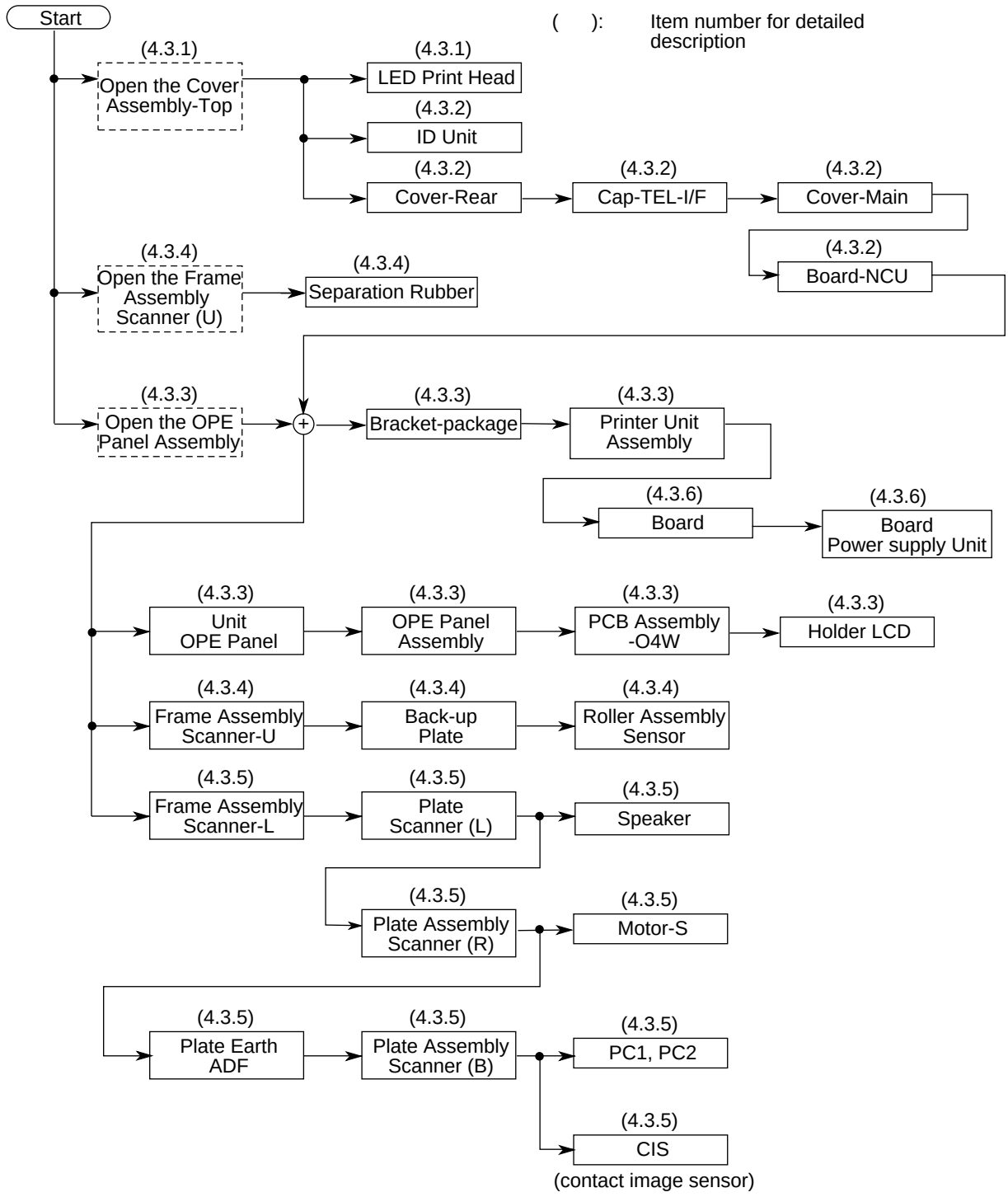


Figure 4.1 (1/2) Disassembly Procedure Flow

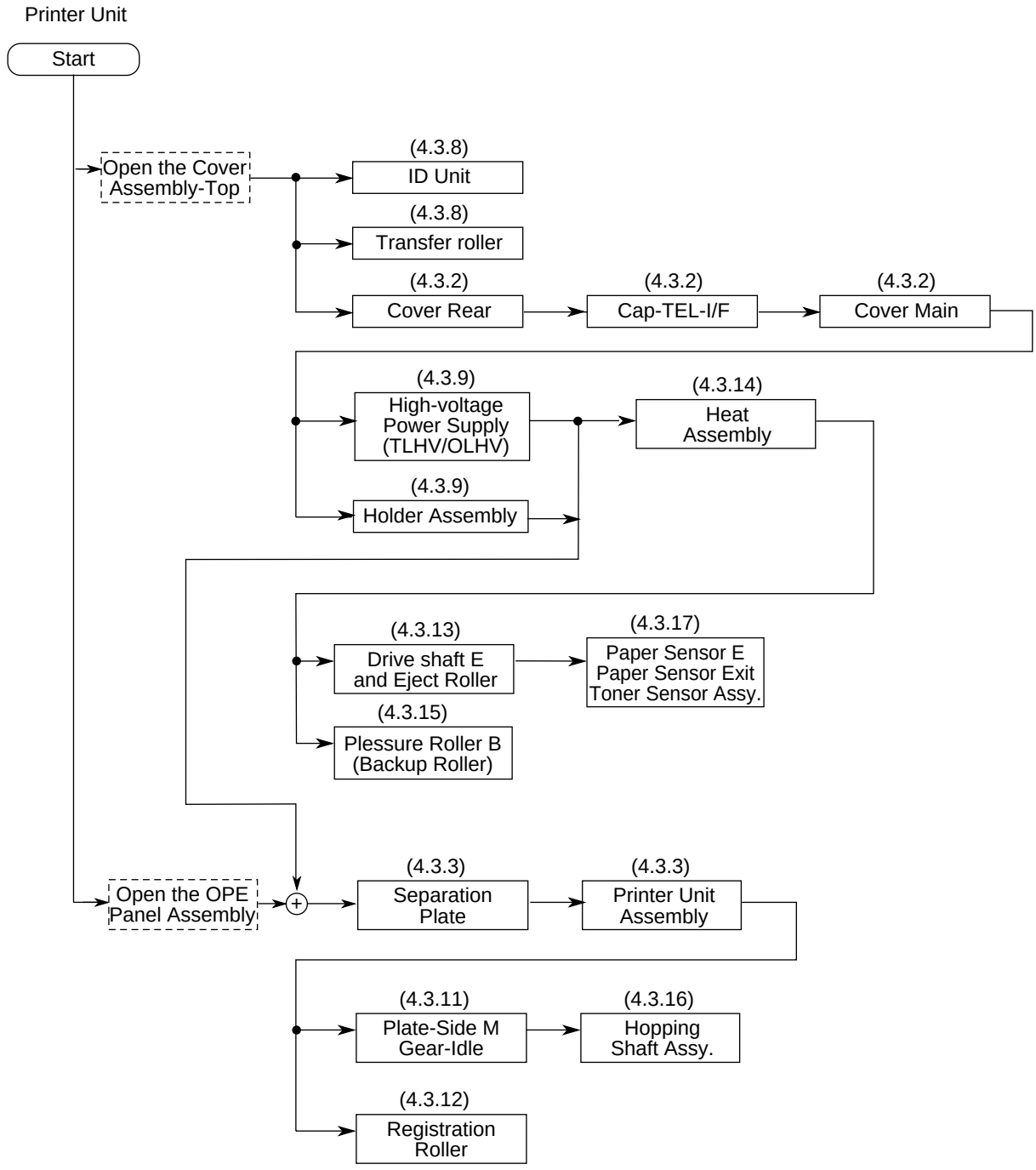


Figure 4.1 (2/2) Disassembly Procedure Flow

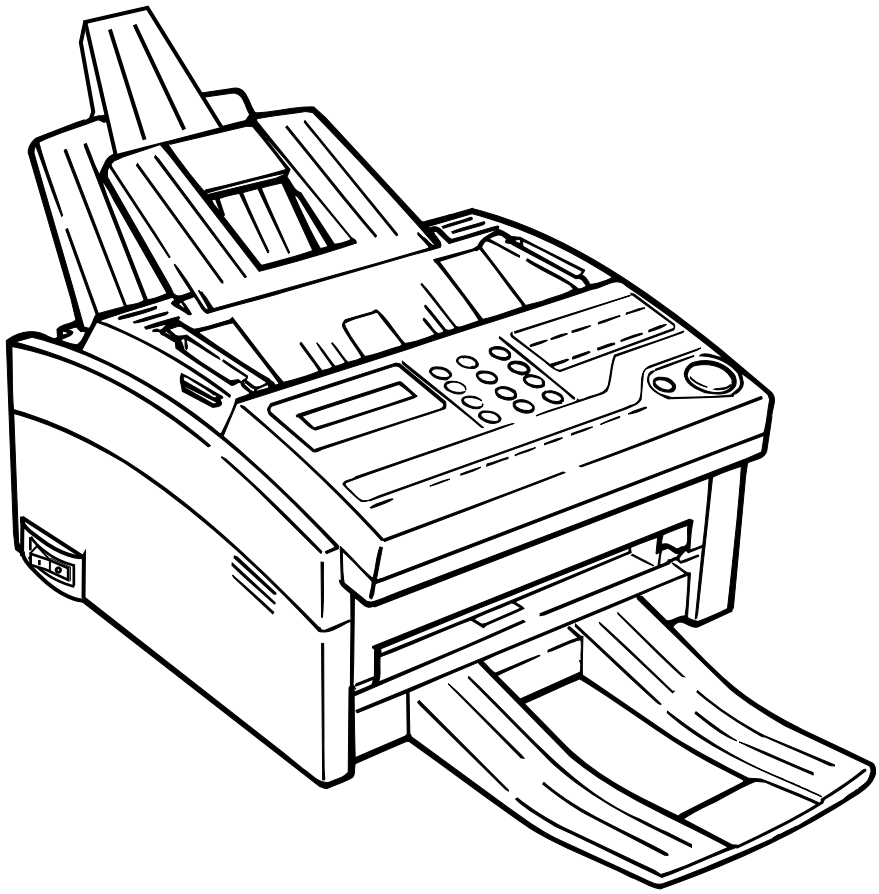


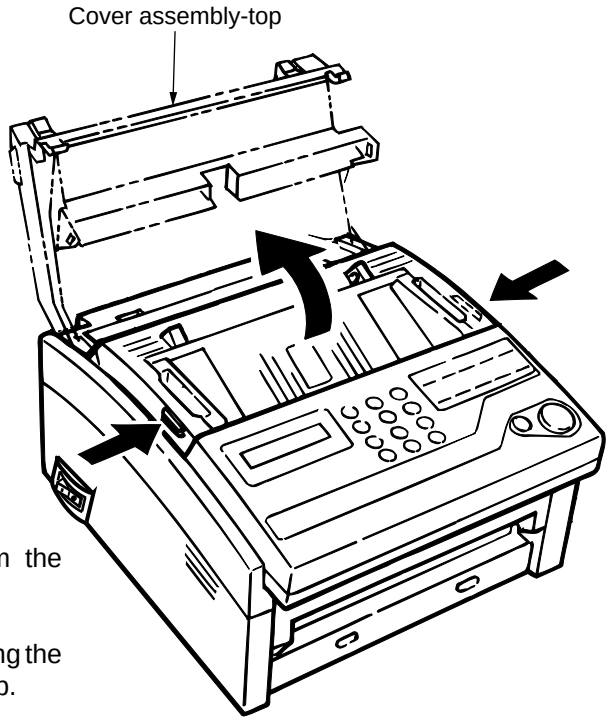
Figure 4.2 Appearance of the OKIFAX4550/OKIOFFICE87

4.3.1 LED Print Head

It is used two kind of head as the LED print head. (208 mm width or 216 mm width)

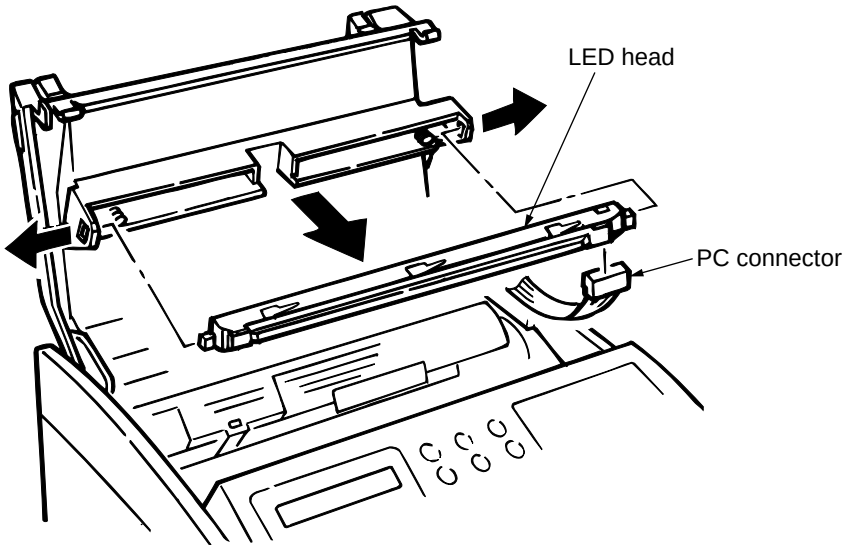
(1) Disassembly procedure

a) Open the cover assembly-top by raising.



b) Disconnect the PC connector from the LED print head.

c) Remove the LED head while spreading the left clamp on the cover assembly-top.



Note: Be sure not to touch directly or push the SLA part of the print head.

(2) Reassembly procedure

Reverse the disassembly procedures.

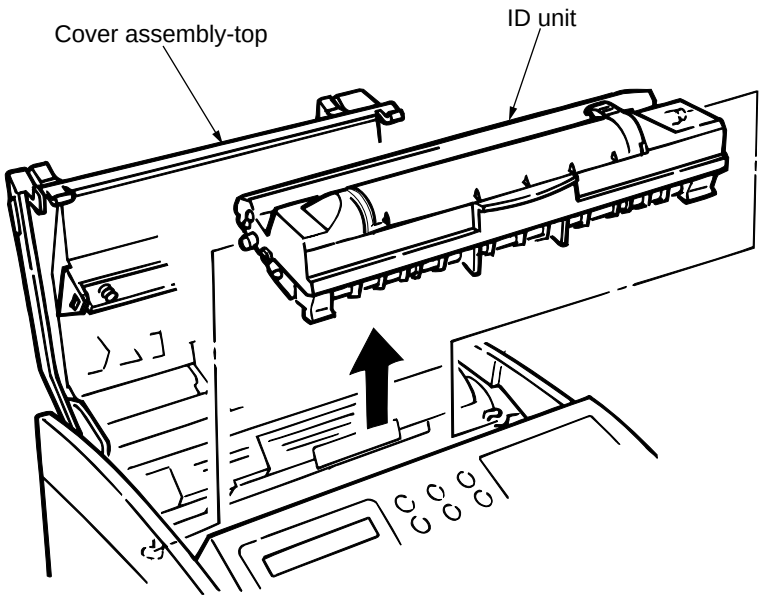
Note: After replacing the LED print head, set drive time of the LED print head following the marking. (Refer to section 5.1). When you replace the LED print head, if the width of the LED head to be used is changed from current version, you should select the head width by the service personnel initial setting. (Refer to Table 2.2 TF No. 26 and 27)

4.3.2 ID Unit, Rear-Cover, Cover-Main, Board-NCU or Board-G4N

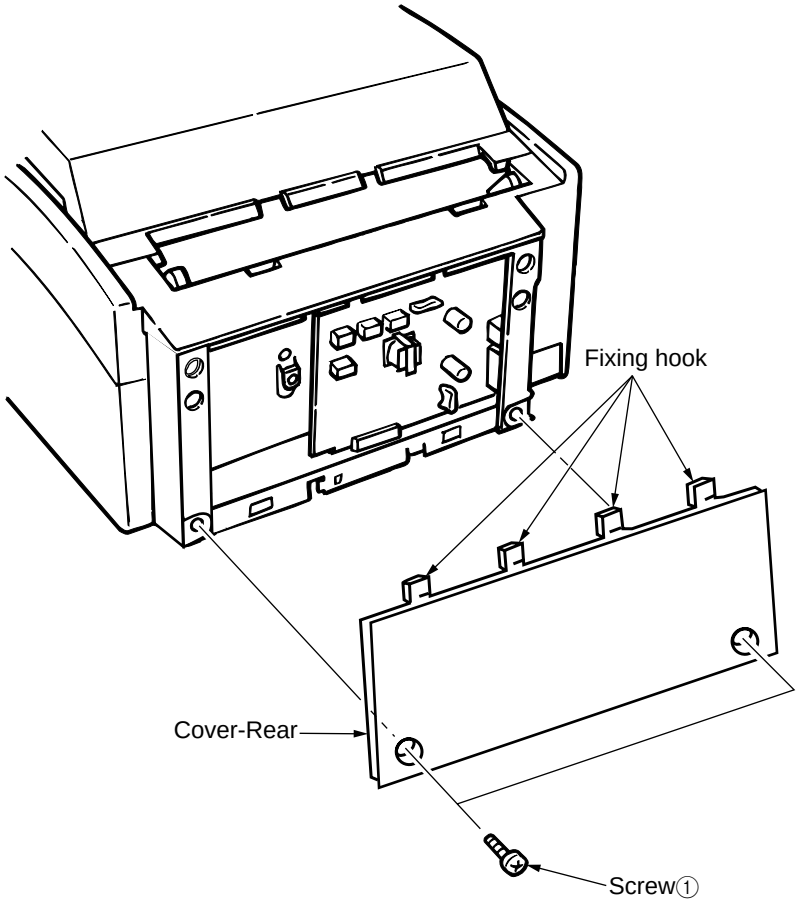
(1) Disassembly procedure

a) Open the cover assembly-top by raising.

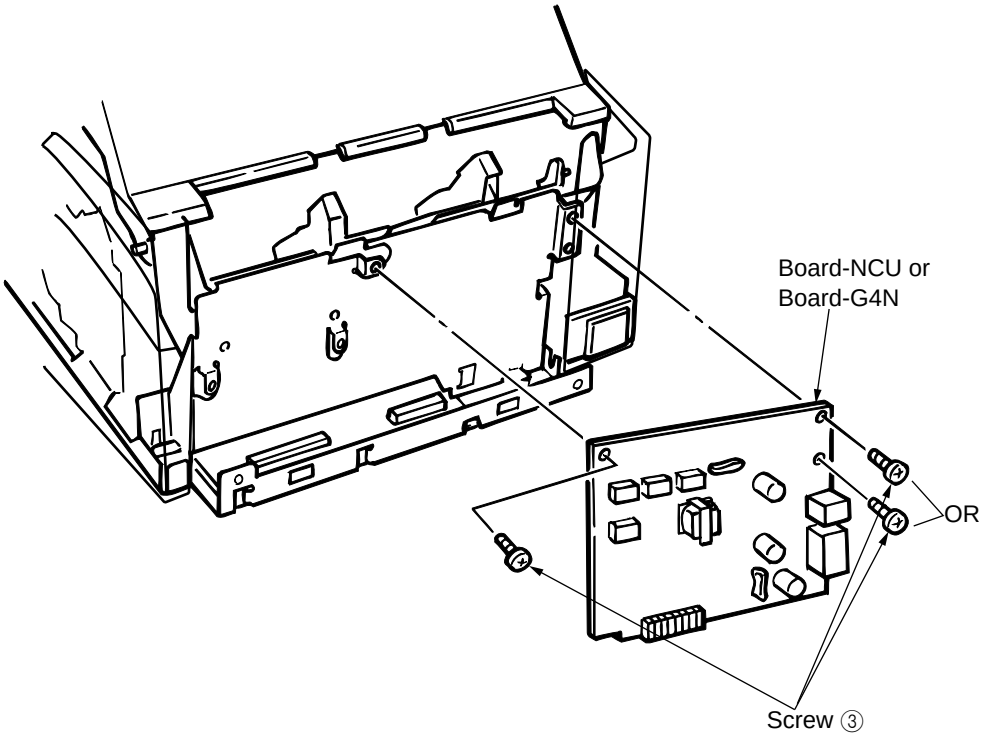
b) Take out the ID unit from the equipment.



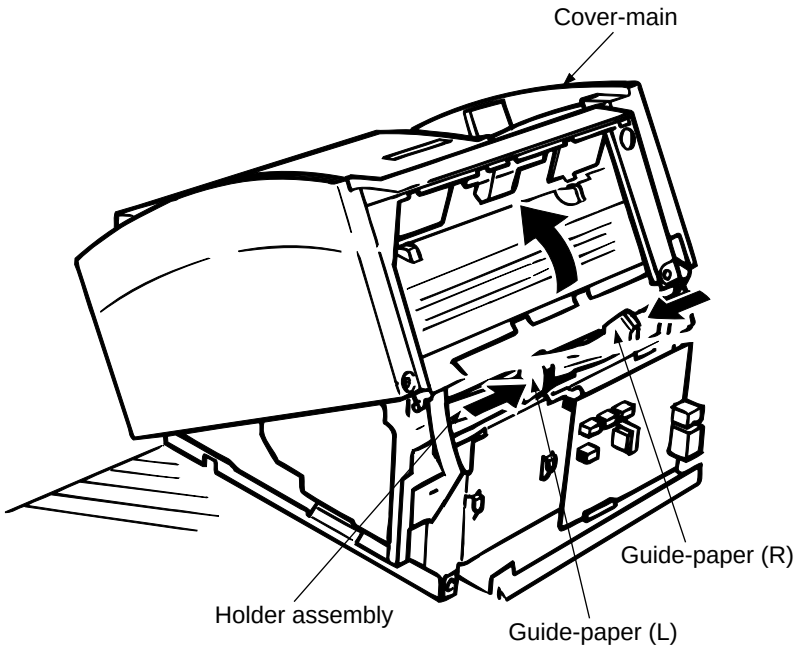
c) Cover-Rear:
Remove the Cover-Rear by removing the screws two and the part of the fixing hooks (4).



d) Board-NCU and Board-G4N
Remove the Board-NCU or Board-G4N by removing the two screw 3 and disconnect the connector (CN3) from Board-46F or R46.



e) First, move the center of Guide-paper (L) and (R) of Holder assembly, and then, open the Cover-Main from the rear side.



(2) Reassembly procedure

Reverse the disassembly procedures.

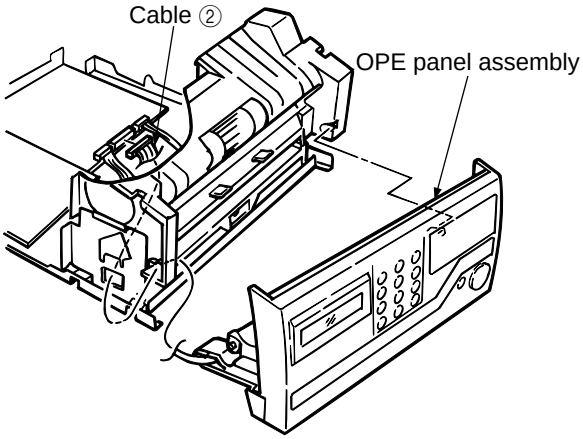
4.3.3 Unit-046 OPE-Panel

(1) Disassembly procedure

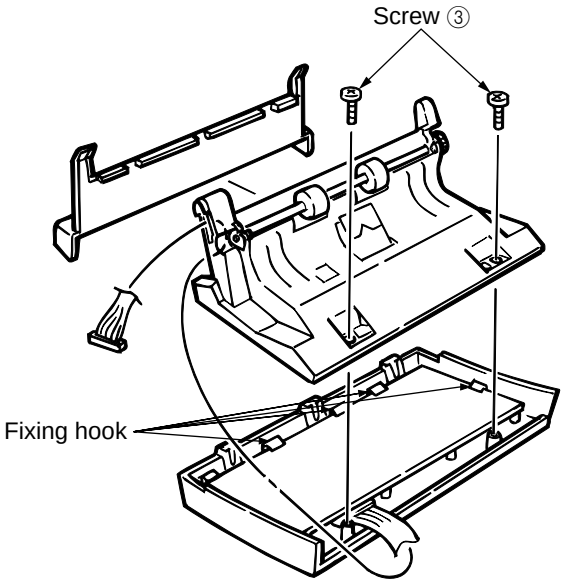
a) First, carry out the disassembly procedure up to the point of the 4.3.2 (Item (e). Cover-main).

b) Dismount the Printer-Unit.
(See Section 4.3.18)

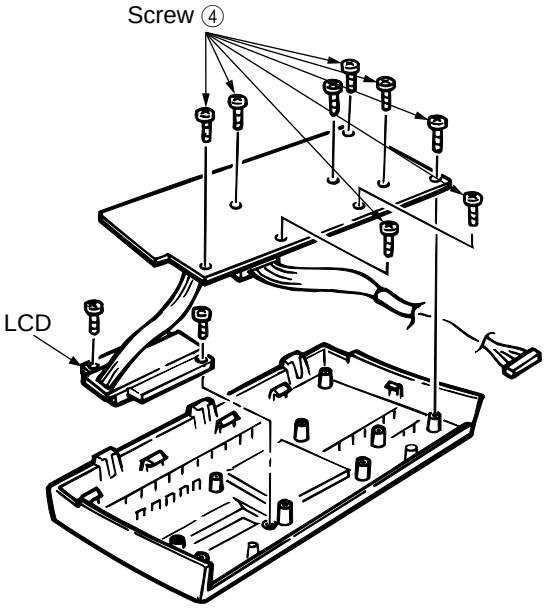
c) Open the OPE-panel assembly.



d) OPE panel assembly:
Remove the OPE panel assembly by removing two screws ③, the eight screws ④ and the part of fixing hooks.



e) Remove the part of LCD by removing the two screws.



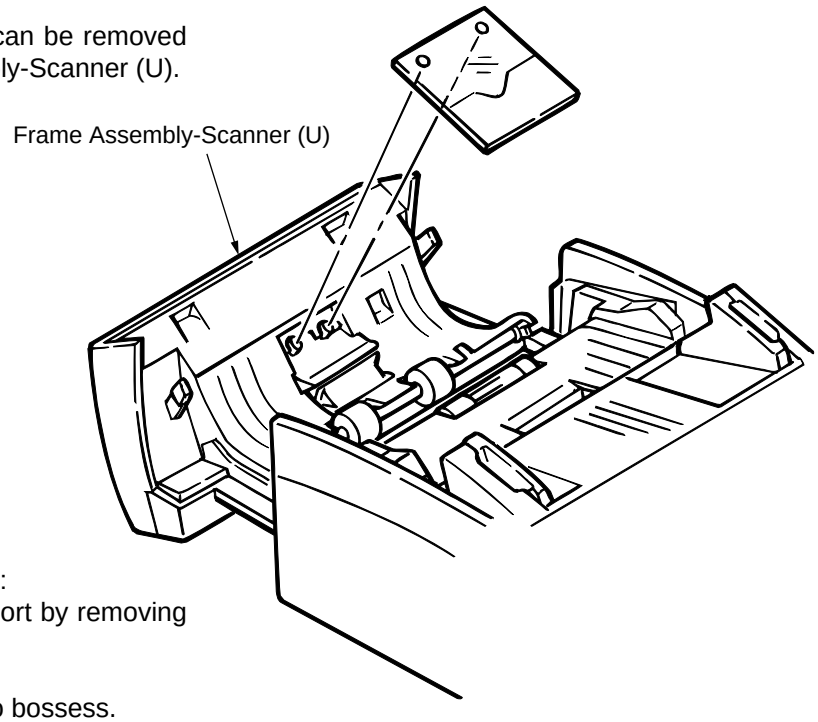
2) Reassembly procedure

Reverse the disassembly procedures.

4.3.4 Separation Rubber, Roller Assembly Sensor

(1) Disassembly procedure

a) Separation rubber:
The separation rubber can be removed from the Frame Assembly-Scanner (U).



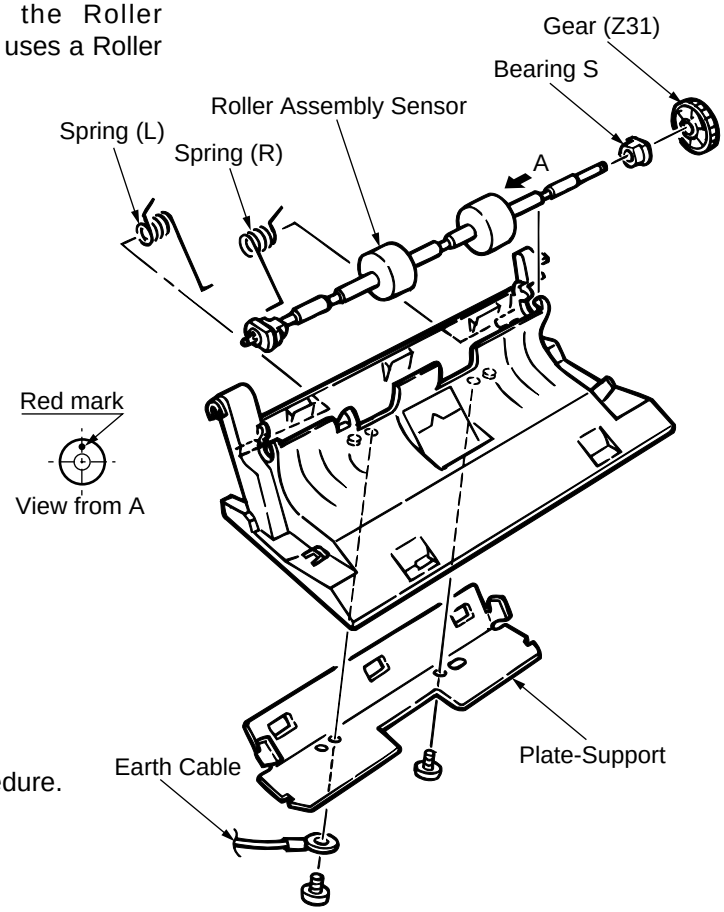
b) Roller Assembly Sensor:
Remove the Plate-Support by removing the two screws ①.

Note: Just fitting to two bossess.

c) Remove the two springs (L) and (R).

d) Remove the Roller Assembly-Sensor by removing the Gear (Z31).

Note: When replacing the Roller Assembly Sensor, uses a Roller with red mark.



(2) Reassembly procedure

Reverse the disassembly procedure.

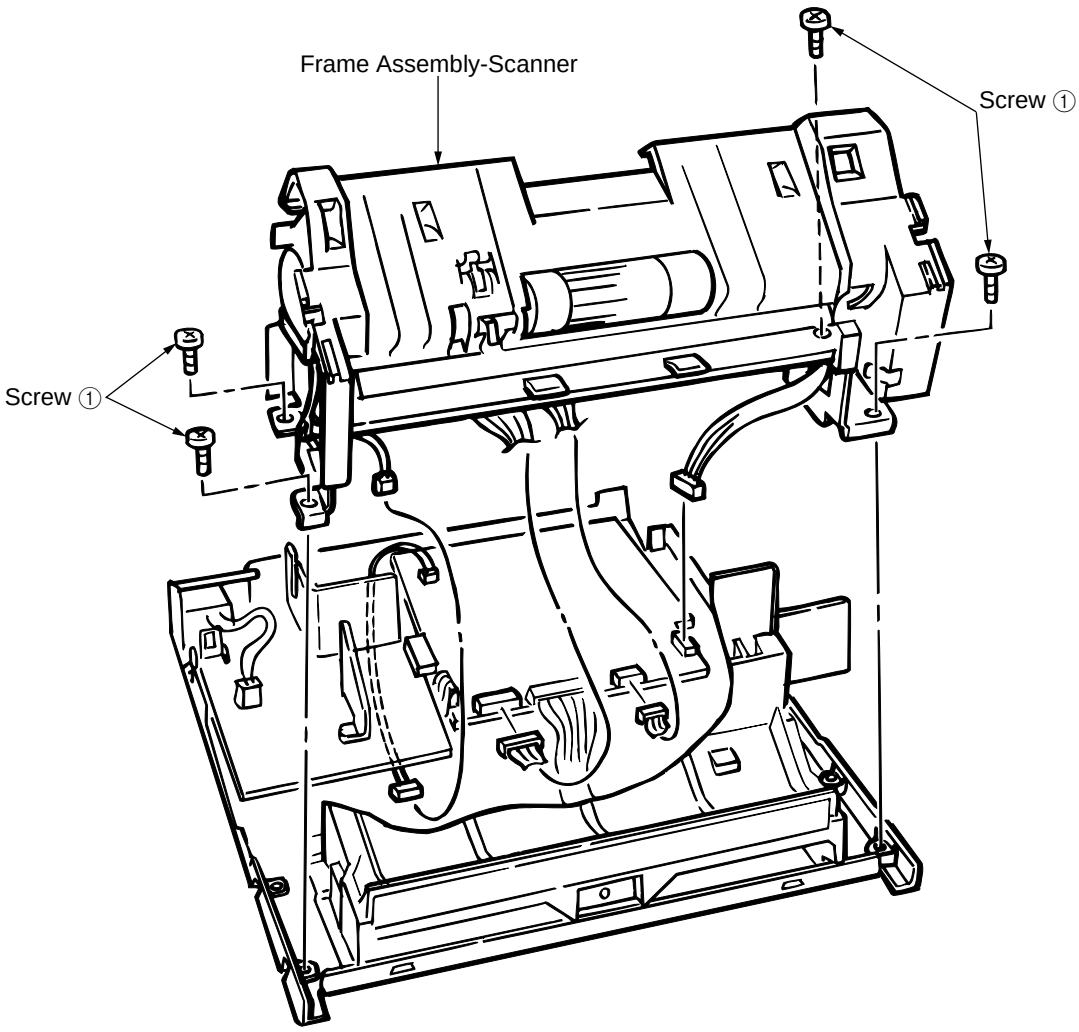
4.3.5 Roller Assembly-ADF, CIS (contact image sensor), Lever-PC1 and PC2

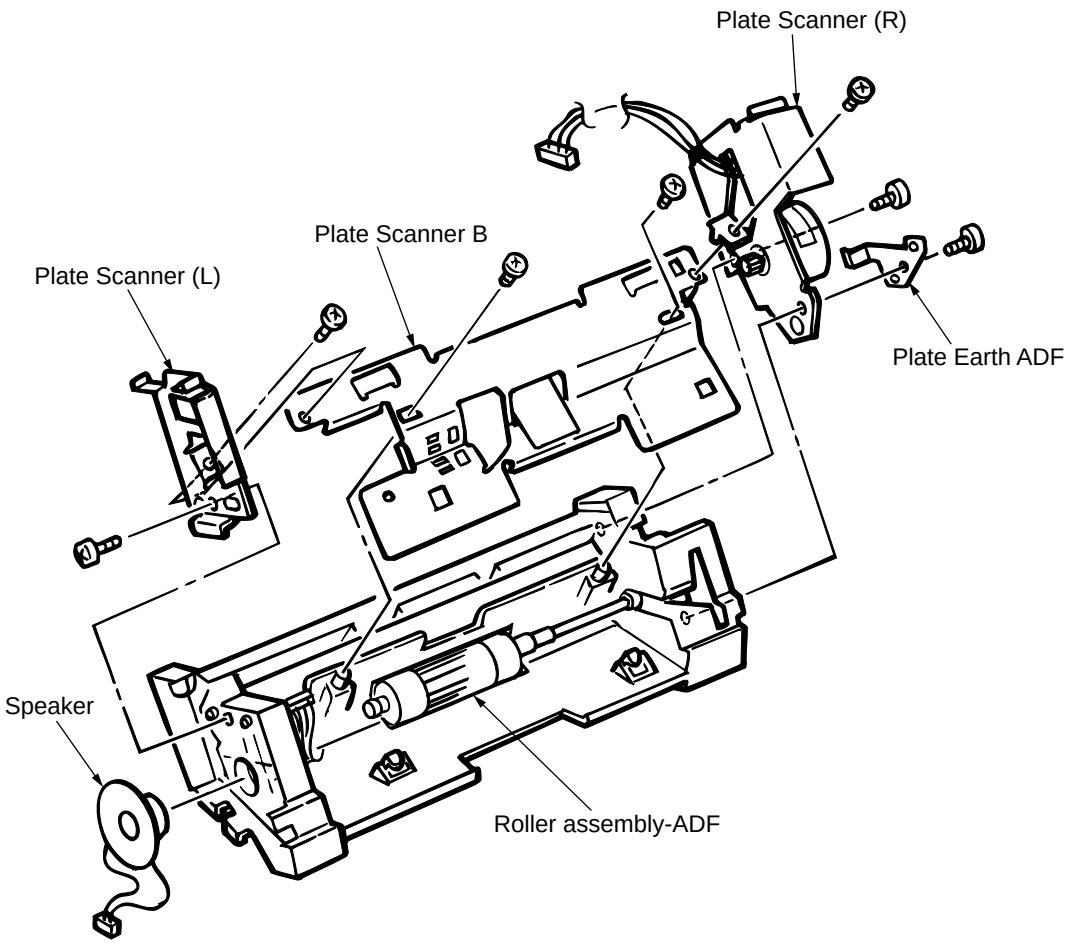
(1) Disassembly procedure

a) First, carry out the disassembly procedure up to the point of the 4.3.2 and 4.3.3.

b) Dismount the Printer-Unit.
(See Section 4.3.18)

c) Remove the Frame assembly-Scanner (L) by removing the four screws ① and the four connectors.

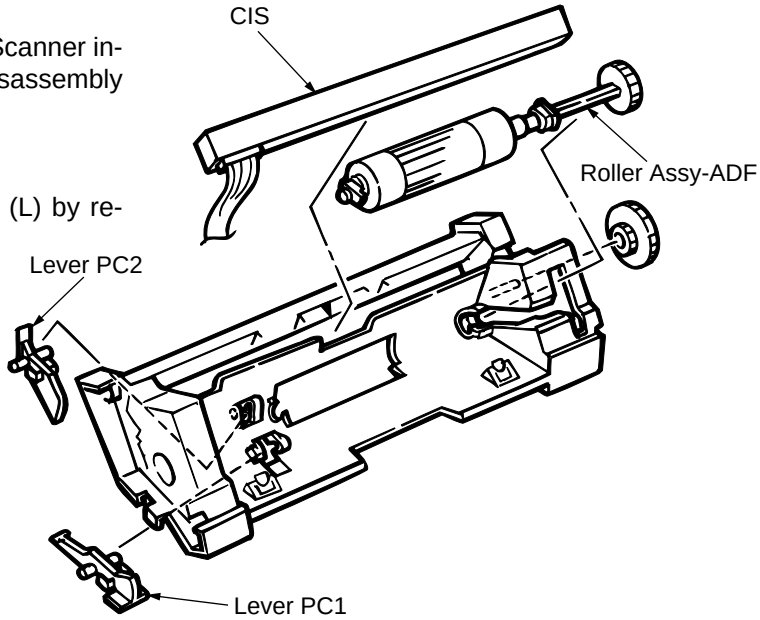




d) Turn the Frame Assembly-Scanner inside out and perform the disassembly procedure.

e) Remove the Plate Scanner (L) by removing the two screws.

f) Remove the Speaker.

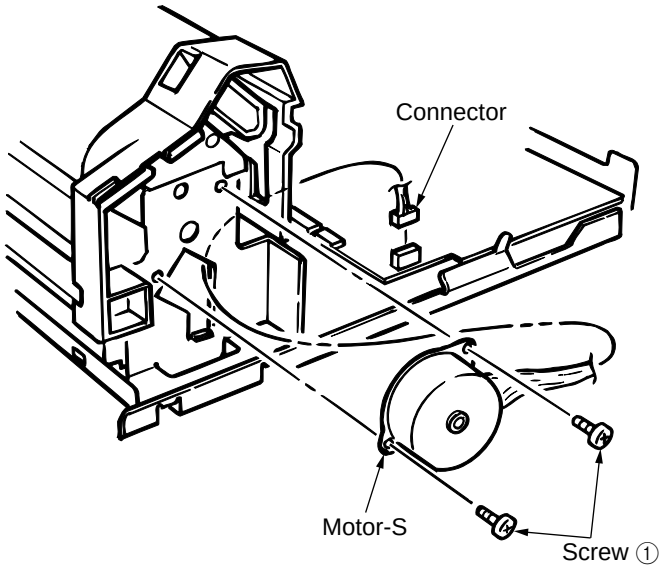


g) Remove the Plate Assembly-Scanner (R) and Plate Earth ADF by removing the three screws.

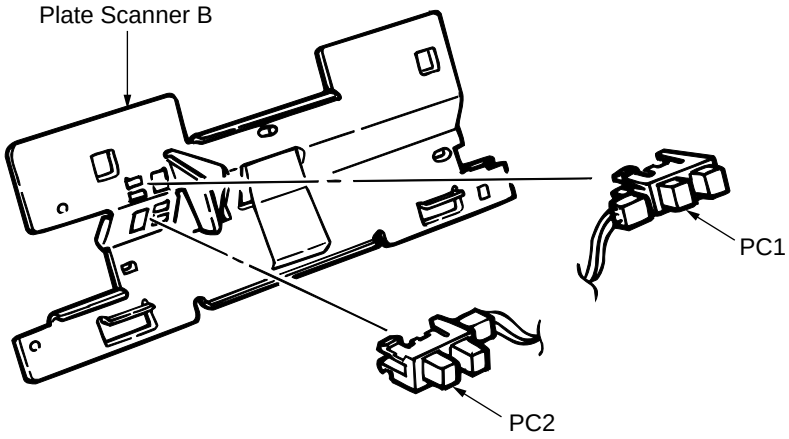
h) Remove the Plate Scanner (B) by removing the two screws and the part of the fixing hooks.

i) Remove the CIS (contact image sensor).

j) Motor-S:
Remove the Motor-S by removing the connector of motor and the two screws ①.



k) Photo-Sensor (PC1, PC2):
After disconnecting the two connectors, remove the photo-coupler sensors PC1 and PC2 on the Plate Scanner B by pressing the latch using the flat screwdriver or like.



(2) Reassembly procedure

Reverse the disassembly procedures.

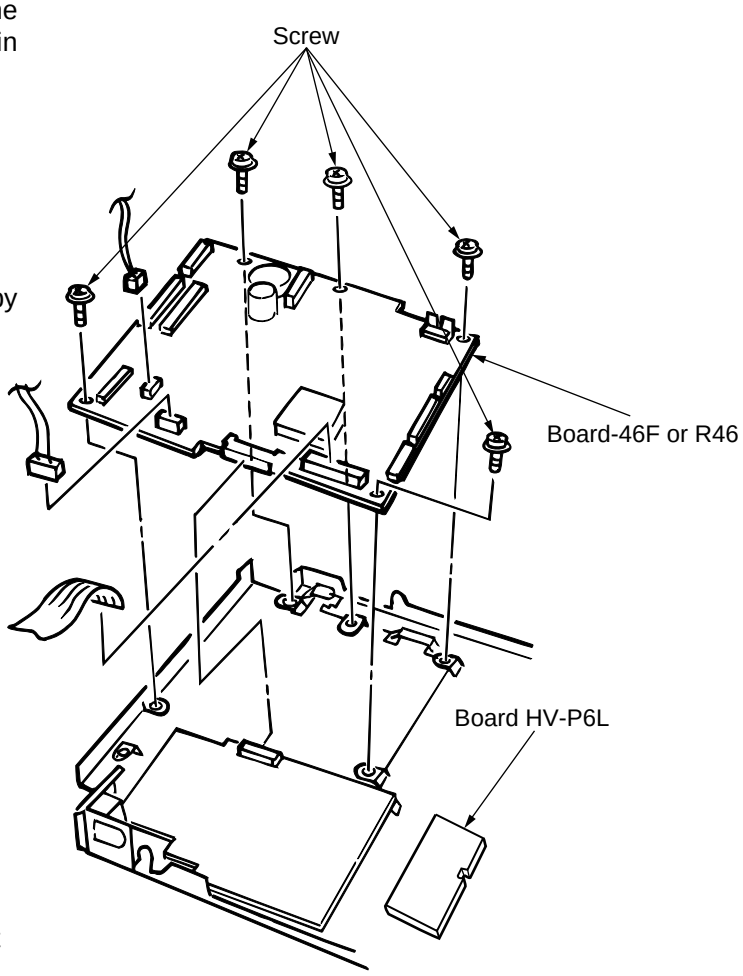
4.3.6 Board-46F, Board-R46 Power Supply Unit, Board HV-P6L

(1) Disassembly procedure

a) First, carry out the disassembly procedure up to the point of the 4.3.2 (Cover-Rear, Cover-Main etc.).

b) Board-46F or R46:
Disconnect the all connectors.

c) Remove the Board-46F or R46 by removing the five screws.

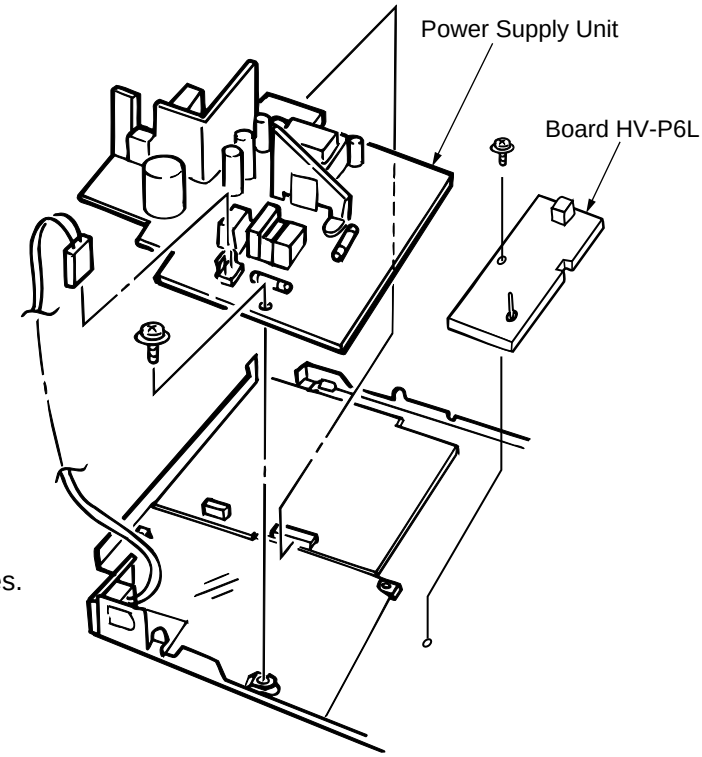


d) Power Supply Unit:
Disconnect the all connectors.

e) Remove the Power Supply Unit by removing the screw.

f) Board HV-P6L:
Disconnect the all connectors.

g) Remove Board HV-P6L by removing one screw.

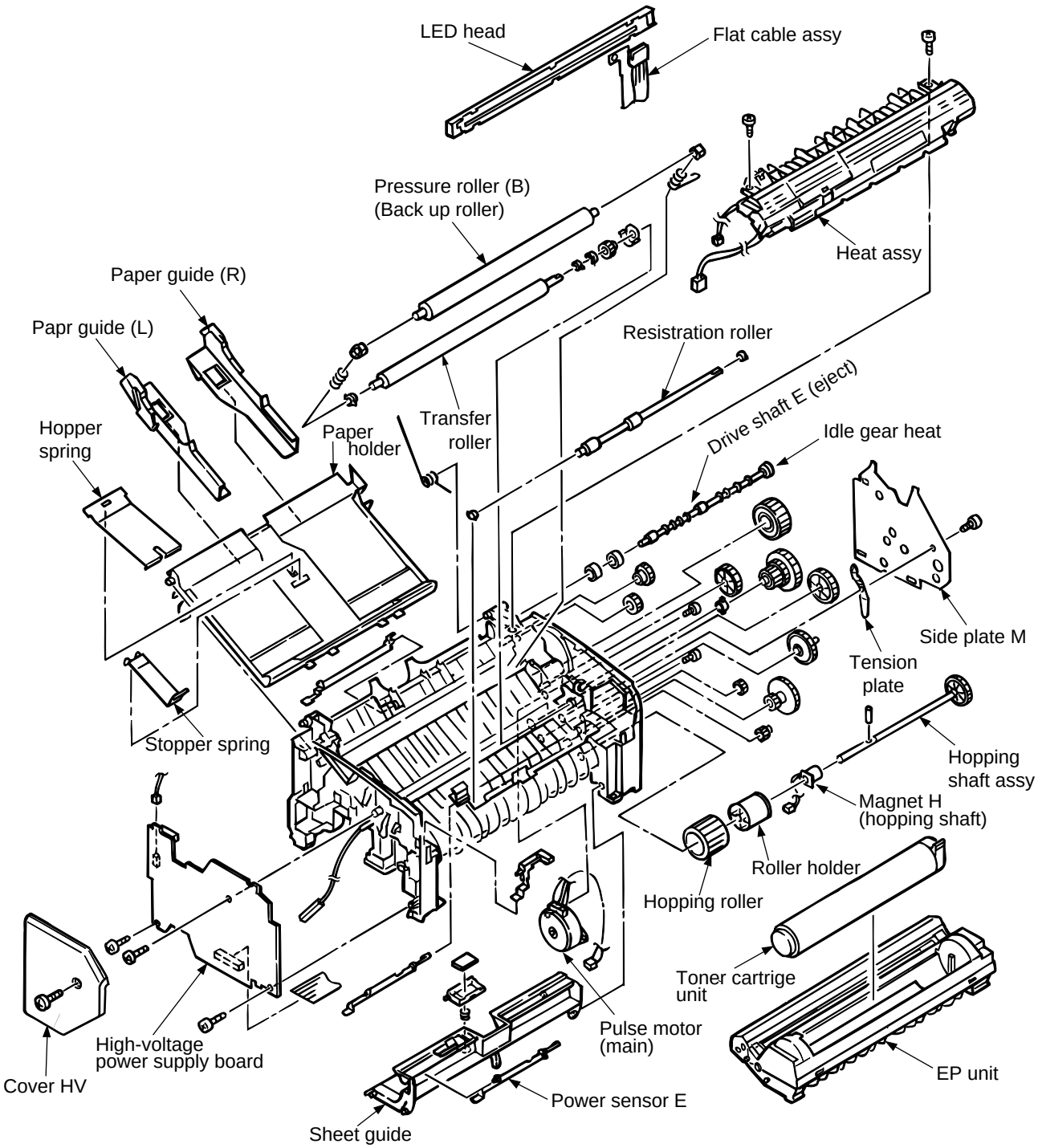


(2) Reassembly procedure

Reverse the disassembly procedures.

4.3.7 Printer Unit Section

[Base Frame Unit]

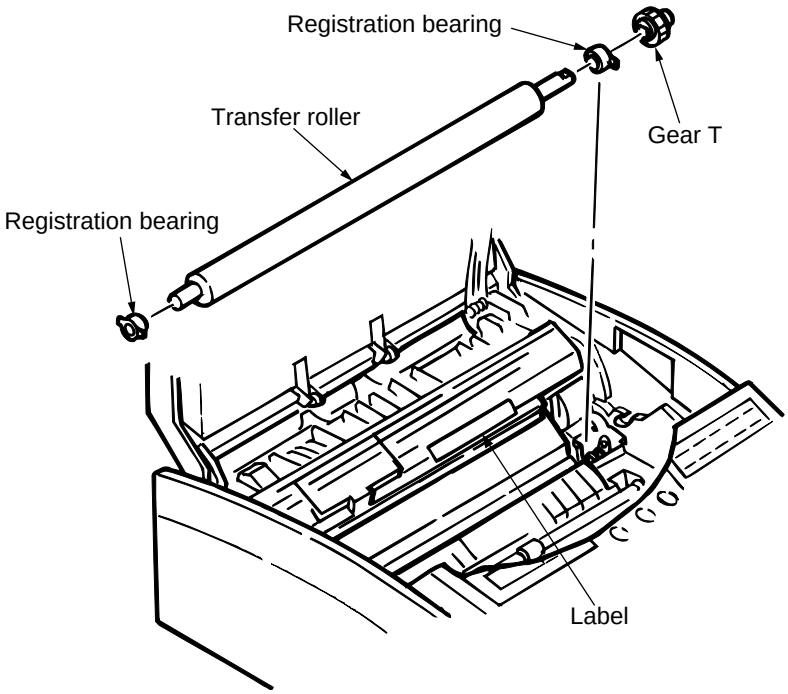


4.3.8 Transfer Roller

(1) Disassembly procedure

a) Open the cover assembly-top by raising and remove the ID unit.

b) Remove the right claw.
Then, dismount transfer roller, two registration bearing, and gear T.



(2) Reassembly procedure

Reverse the disassembly procedures.

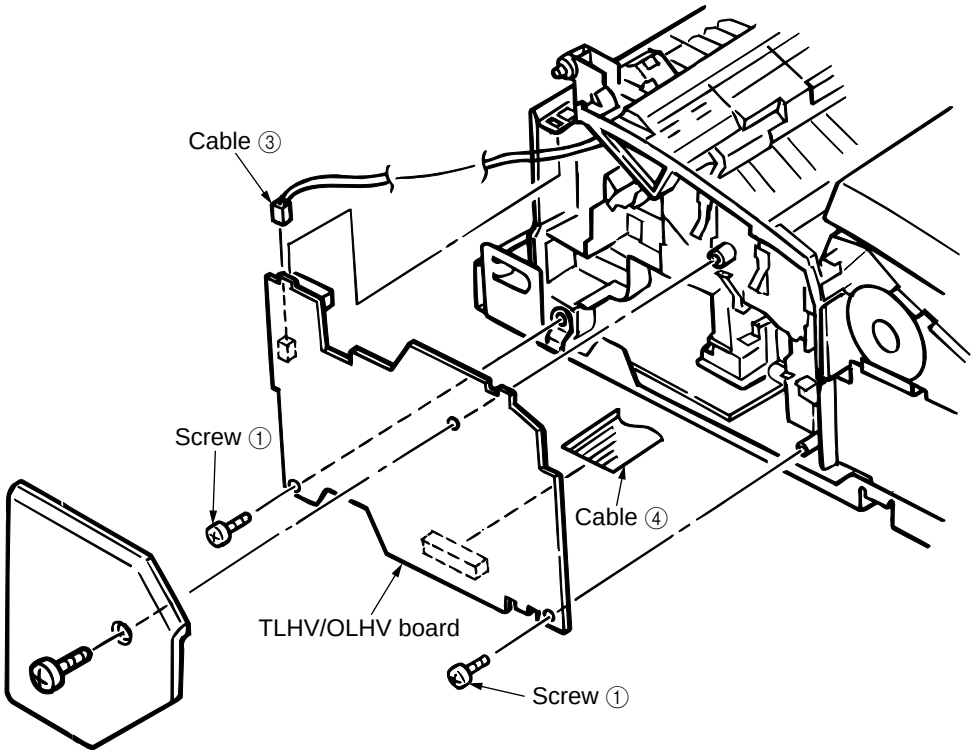
4.3.9 High-Voltage Power Supply Unit (HV-P2H)

(1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

b) Remove three screws ① then remove Cover-HV and draw out high-voltage power supply board (HV-P2H).

c) Disconnect all the cables ③ and ④ from high-voltage power supply board (HV-P2H) and dismount high-voltage power supply board.



Caution: Note the following when assembling the high-voltage power supply board:
- Mount the high-voltage power supply board with Cover-top assembly removed or open.
- Take care that cable ③ will not interfere with the paper sensor exit when it is connected.

(2) Reassembly procedure

Reverse the disassembly procedures.

4.3.10 Holder Assembly

(1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

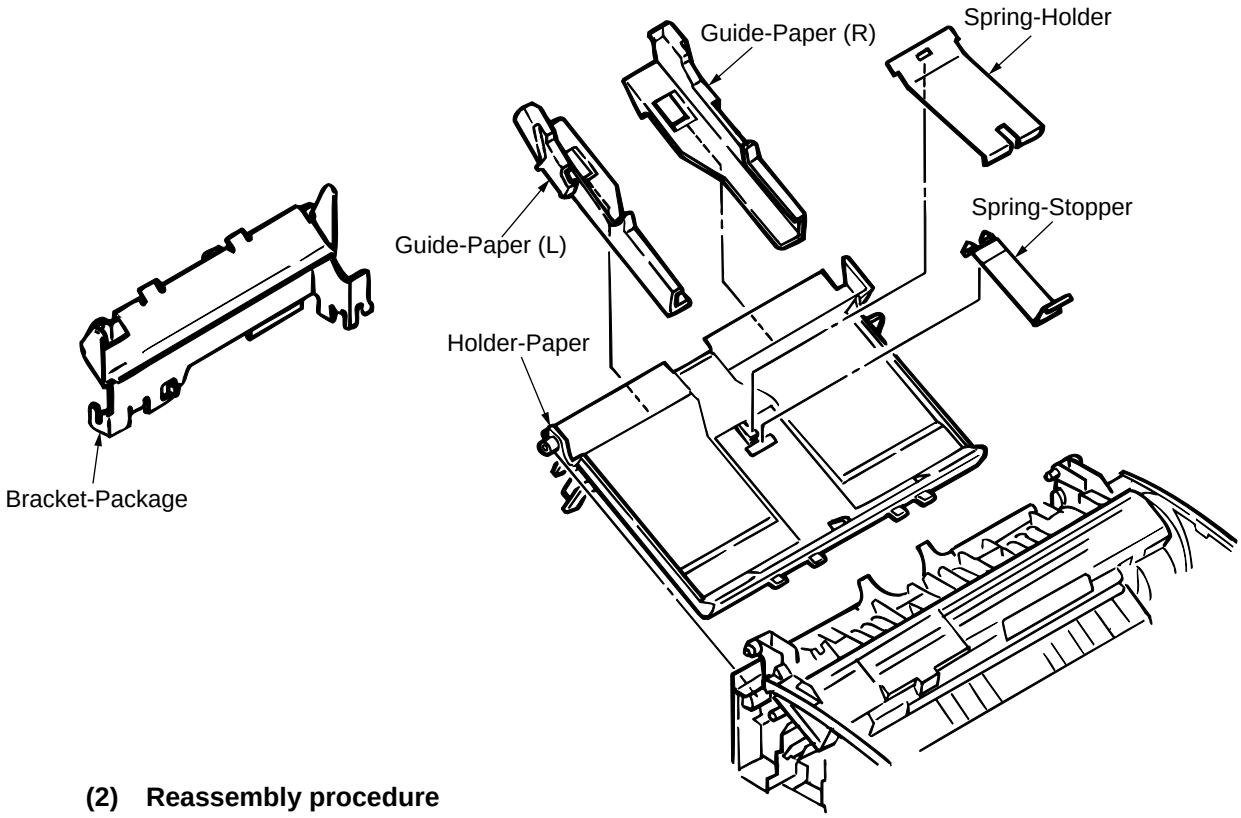
b) Dismount the Bracket-Package.

c) Dismount the Holder-Paper.

d) Unlock and dismount the Guide-Paper (L) and Guide Paper (R).

e) Remove the claw and dismount Spring-Holder.

f) Remove the claw and dismount Spring-Stopper.



(2) Reassembly procedure

Reverse the disassembly procedures.

4.3.11 Plate-Side M and Gear-Idle

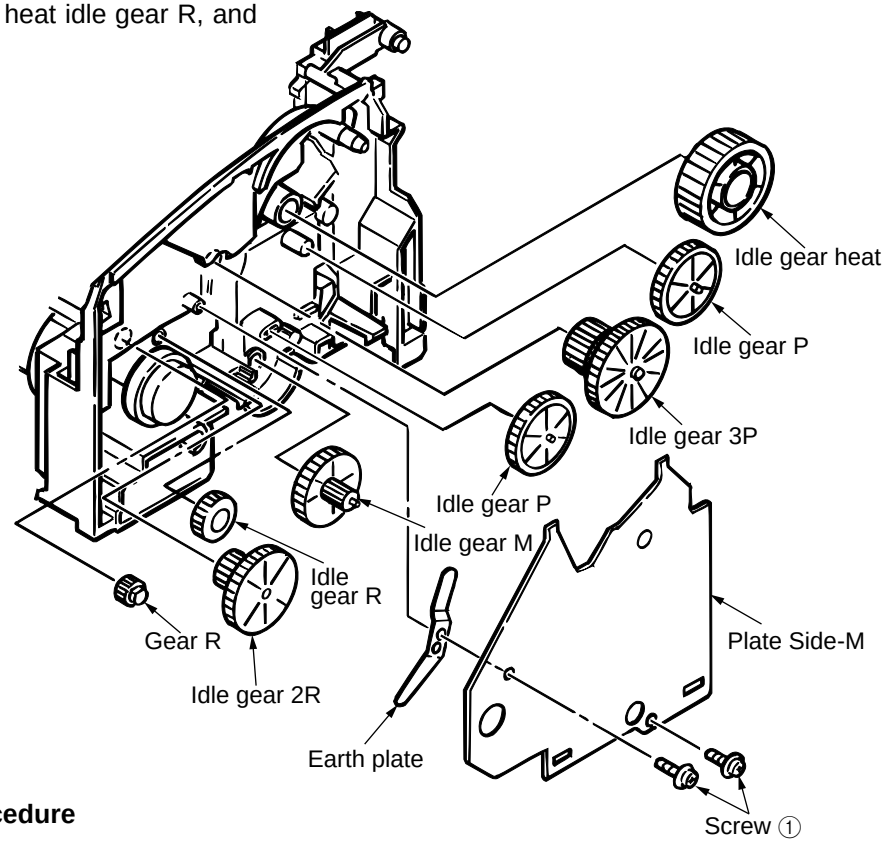
(1) Disassembly procedure

Perform parts replacement while making the base frame assembly stand so that Plate-Side M will face upward.

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

b) Remove two screws ① and two claws, then dismount Plate-Side M.

c) Dismount Plate-Earth, two idle gears P, idle gear M, idle gear 3R, idle gear 2R, idle gear heat idle gear R, and gear R.



(2) Reassembly procedure

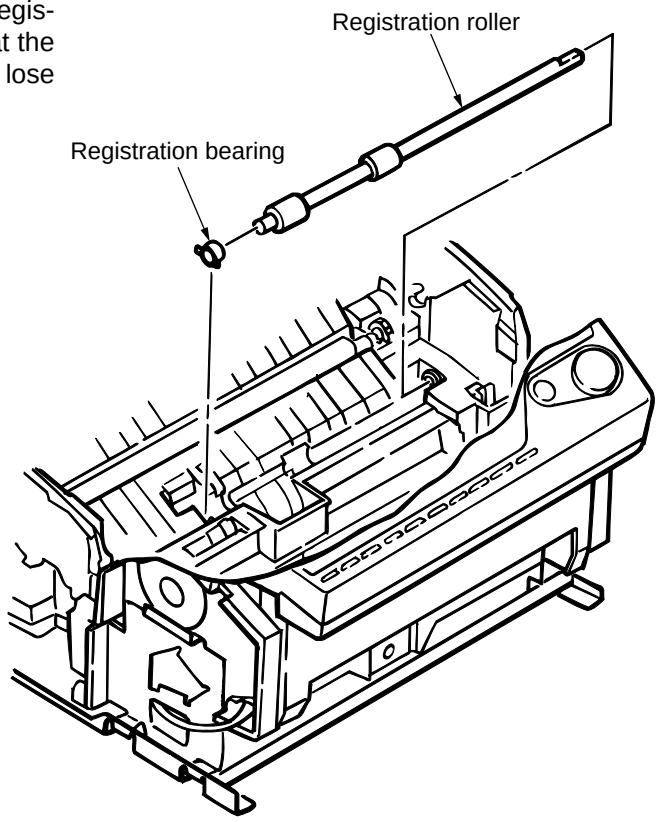
Reverse the disassembly procedure.

4.3.12 Registration Roller

(1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

b) Move registration roller to the right and dismount it by lifting. (Two registration bearings also come off at the same time. Take care not to lose them.)



(2) Reassembly procedure

Reverse the disassembly procedures.

4.3.13 Drive Shaft E (Eject) and Eject Roller

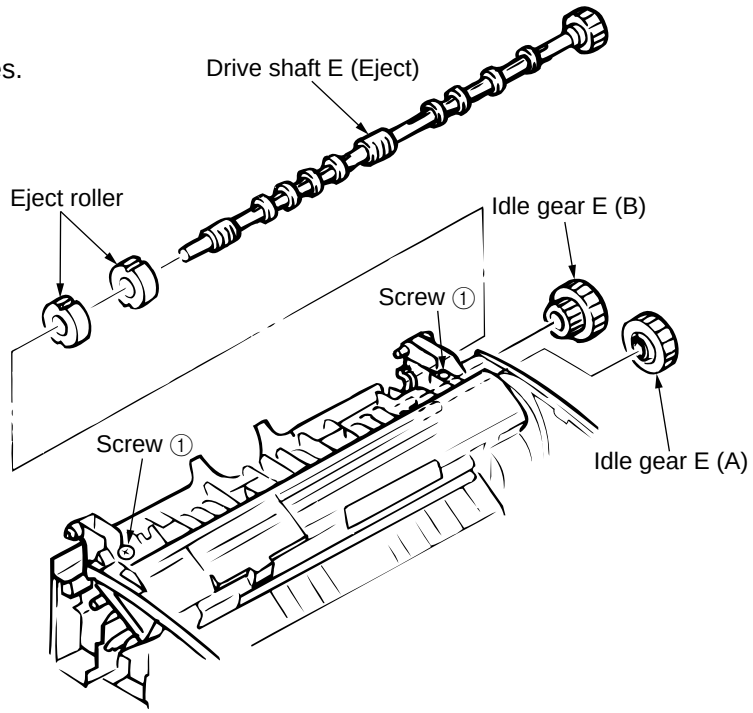
(1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

b) Remove two screws ① from Cover Heat Assembly (section 4.3.14), lift the heat assay, and dismount idle gear E (A) and idle gear E (B).

c) Unlock and dismount drive shaft E (Eject).

d) Dismount two eject rolles.



(2) Reassembly procedure

Reverse the disassembly procedures.

4.3.14 Heat Assembly

This section explains how to dismount the heat assembly and parts in the assembly.

(1) Disassembly procedure

< Dismounting the heat assembly>

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

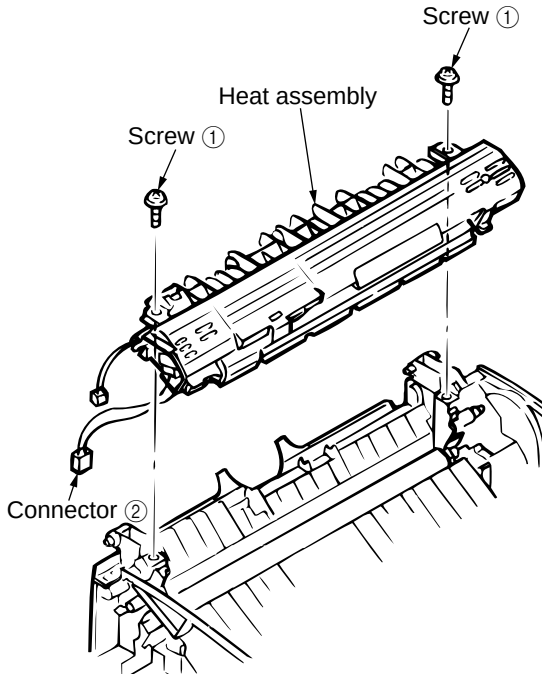
b) Dismount the high-voltage power supply board. (See Section 4.3.9)

c) Remove NCU-Board with two screws.

d) Remove Bracket-Package with three screws, then disconnect Cable-Flat from connector on 46F or R46-Board (M-CNT).
(See Sction 4.3.18)

e) Pull out the Holder-Assy. (See Section 4.3.10)

f) Disconnect connector ②, remove two screws ①, and dismount the heat assembly.



<Dismounting parts in heat assembly>

a) Dismount heat separator.

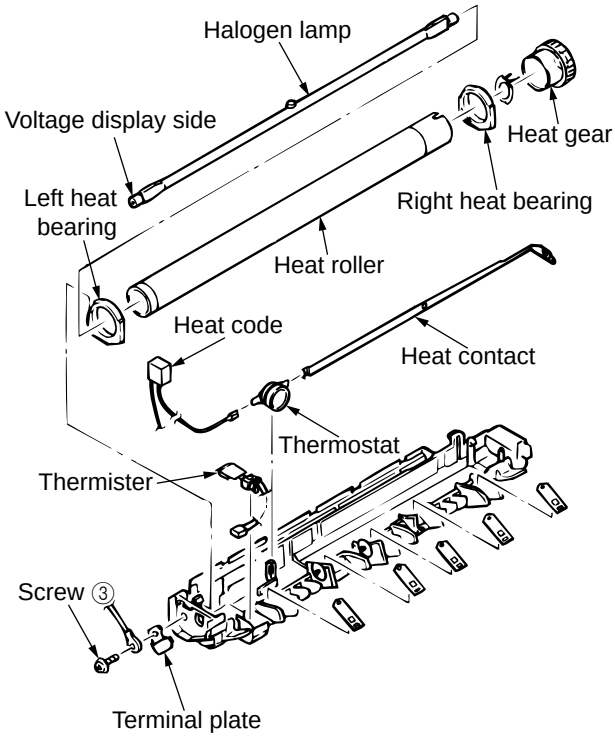
b) Remove screw ③ and dismount terminal plate. (Handle heat assembly carefully because Halogen lamp comes off.)

c) Turn left and right heat bearings in the arrow direction to unlock. Then, dismount halogen lamp, heat bearing, heat roller, and heat gear together. (Take care not to drop the Halogen lamp.)

d) Dismount thermistor.

e) Dismount the clamp, then thermostat, heat contact, and heat cord together.

f) Dismount heat contact and heat cord from thermostat.



Caution: Take care not to bend the claw when dismounting heat bearing.

(2) Reassembly procedure

Reverse the disassembly procedures

4.3.15 Pressure Roller B (Back Up Roller)

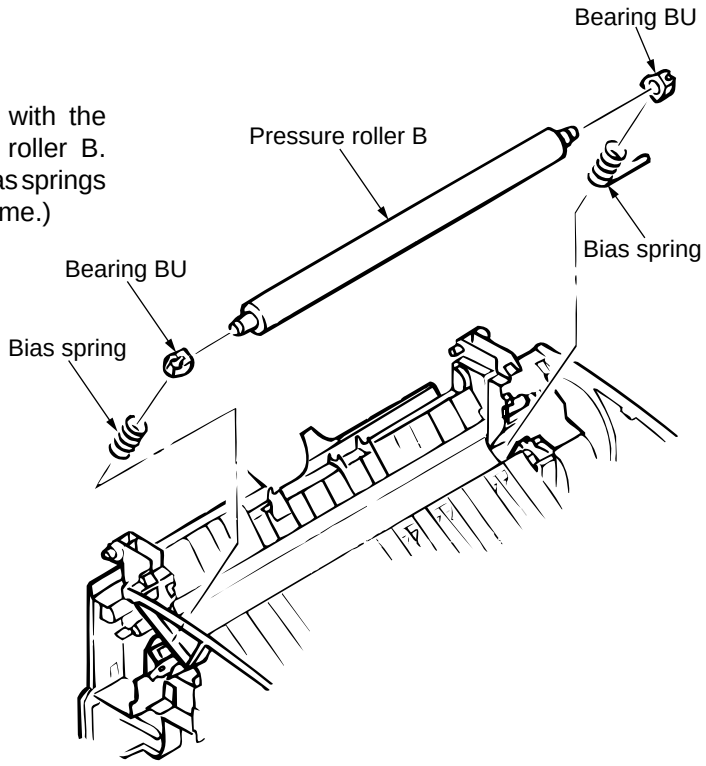
(1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

b) Dismount the high-voltage power supply board. (See Section 4.3.9)

c) Dismount heat assembly. (See section 4.3.14)

d) Dismount the engagement with the left ground, then pressure roller B. (Two bearing BUs and two bias springs also come off at the same time.)



(2) Reassembly procedure

Reverse the disassembly procedures

4.3.16 Hopping Shaft Assembly

(1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

b) Dismount the high-voltage power supply board. (See Section 4.3.9)

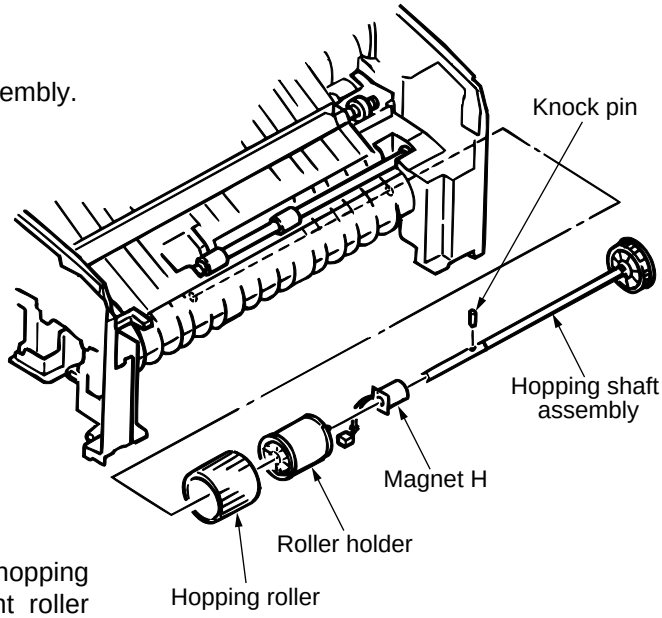
c) Dismount the paper holder assembly. (See Section 4.3.10)

d) Dismount the sheet guide. (See Section 4.3.11)

e) Dismount the side plate M. (See Section 4.3.11)

f) Raise up roller holder, slide hopping shaft assembly, and dismount roller holder and hopping roller. (Knock pin also comes off at the same time. Take care not to lose it.)

g) Draw out hopping shaft assembly to the right and dismount magnet H.



(2) Reassembly procedure

Reverse the disassembly procedures

4.3.17 Paper Sensor E, Paper Sensor Exit and Toner Sensor Assembly

(1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

b) Dismount the high-voltage power supply board. (See Section 4.3.9)

c) Dismount the paper holder assembly. (See Section 4.3.10)

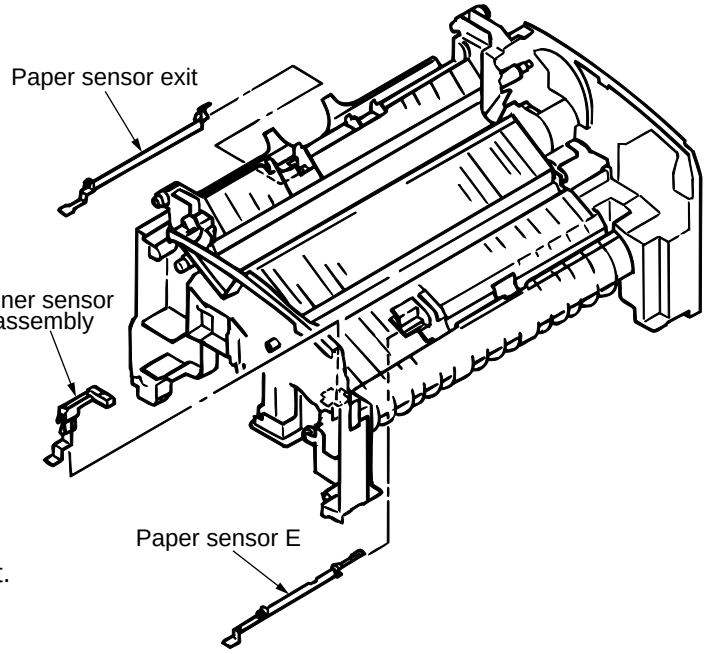
d) Dismount the heat assembly. (See Section 4.3.14)

e) Dismount the drive shaft E. (See Section 4.3.13)

f) Dismount the paper sensor E.

g) Dismount the paper sensor exit.

h) Dismount the toner sensor assembly.



(2) Reassembly procedure

Reverse the disassembly procedures

4.3.18 Printer Unit

(1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-Main).

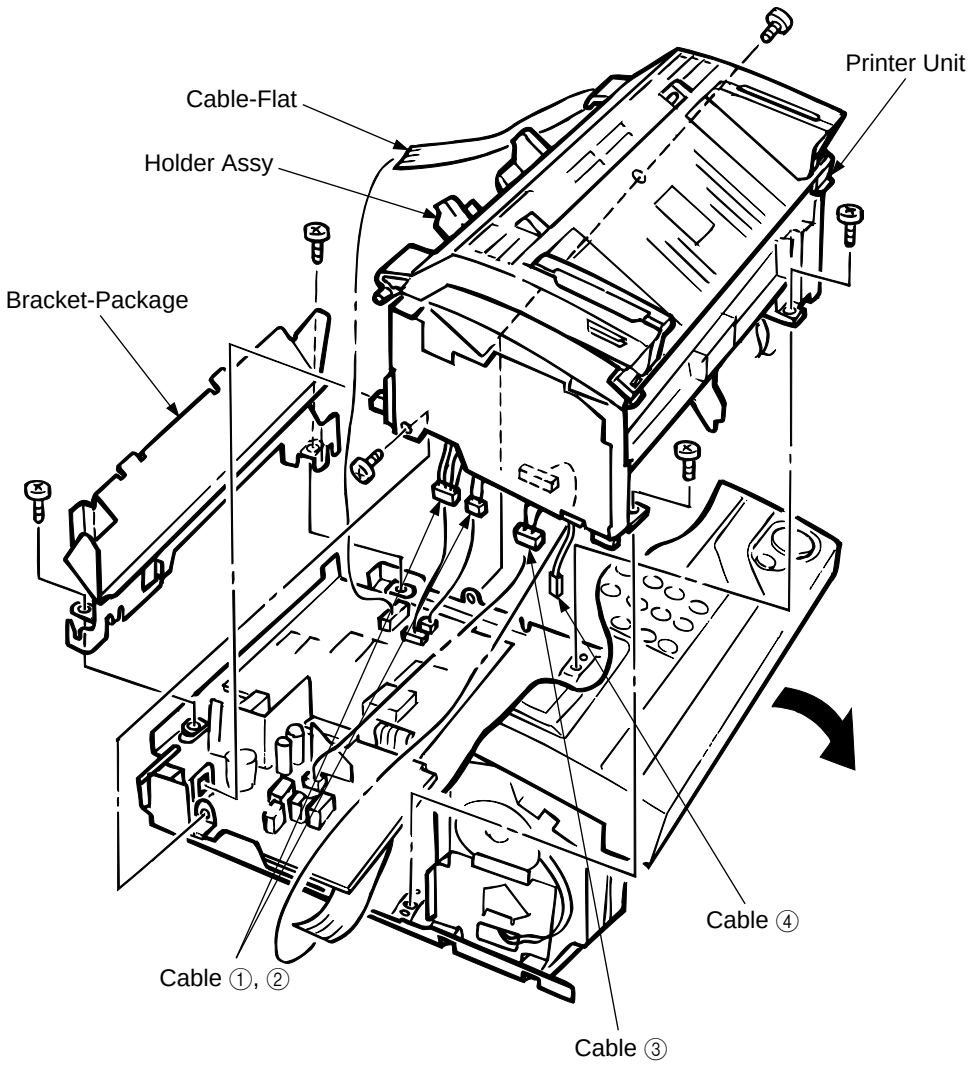
b) Remove Bracket-Package with three screws, then disconnect Cable-Flat from connector on 46F or R46-Board (M-CNT).

c) Pull out the Holder-Assy.

d) Dismount the high-voltage power supply board.
(See Section 4.3.9)

e) Disconnect cable ① and ② from connector on Board-46F or R46 (M-CNT), and disconnect cable ③ from Connect on Power Supply Unit, and disconnect cable ④ from Board HV-P6L.

f) Remove the Printer Unit by removing three screws.



5. ADJUSTMENTS

5.1 Setting of LED Print Head Drive Time

5.1.1 Setting for OKIFAX4550

- Adjustment point: Technical Function No. 26.

* To bring the LCD up to Technical Function, press SELECT FUNCTION key once, COPY key twice and "2" key (In case of no message in memory).

Note: When the rank marking of the replaced LED print head (new part) is the same as that of the used LED print head (old part), you do not always have to set the LED print head drive time.

Adjustment:

1) Turn AC power ON.
2) Setting of LED print head should be according to the Table 5.1.1 below:

Table 5.1.1 Setting of Technical Function No. 26

Setting / Rank Marking	MSB ↕ LSB																														
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
		0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
		0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
		0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
291 – 313										*																							
269 – 290											*																						
248 – 268												*																					
229 – 247													*																				
212 – 228														*																			
196 – 211															*																		
181 – 195																*																	
168 – 180																	*																
155 – 167																		*															
143 – 154																			*														
132 – 142																				*													
122 – 131																					*												
113 – 121																						*											
105 – 112																							*										
100 – 104																								*									

Note: The luminous intensity ranking is determined by the first, second and third digits from the right in the LED print head (i.e. in ---XX122, 122 is the luminous intensity ranking.)

5.1.2 Setting for OKIOFFICE87

- Adjustment point: Technical Function No. 26.

* To bring the LCD up to Technical Function, press SELECT FUNCTION key once, COPY key twice and "2" key (In case of no message in memory).

Note: When the rank marking of the replaced LED print head (new part) is the same as that of the used LED print head (old part), you do not always have to set the LED print head drive time.

Adjustment:

1) Turn AC power ON.
2) Setting of LED print head should be according to the Table 5.1.2 below:

Table 5.1.2 Setting of Technical Function No. 26

Setting / Rank Marking	MSB ↕ LSB																														
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
		0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
		0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
		0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
085 —												*																				
080 — 084													*																				
074 — 079														*																			
070 — 073															*																		
065 — 069																*																	
061 — 064																	*																
058 — 060																		*															
053 — 057																			*														
050 — 052																				*													
047 — 049																					*												
044 — 046																						*											
041 — 043																							*										
038 — 040																								*									
036 — 037																									*								
033 — 035																										*							
031 — 032																											*						
029 — 030																												*					
027 — 028																													*				
— 026																														*			

Note: The luminous intensity ranking is determined by the first, second and third digits from the right in the LED print head (i.e. in ---XX<u>061</u>, 061 is the luminous intensity ranking.)

5.2 Confirmation

5.2.1 Confirmation Items

The clock frequency and power voltage of the machine are not possible to adjust in the field. However, their measurement procedures are described here for confirmation of clock frequency and each voltage.

1) Clock Frequency

- Measurement point: 46F board; LC3-3 pin and ground terminal
  R46 board; IC24-9 pin and ground terminal
- Specification: 20.000 MHz ± 50 PPM

Note: If the counter does not read with 20.000 MHz, replace with a new crystal oscillator (X1).

2) +5V DC Voltage (SUB)

- Measurement point: 46F/R46 board; CN7-12 pin and ground terminal
- Specification: +5.2V ± 4%

3) +5V DC Voltage

- Measurement point: 46F/R46 board; CN7-2 & 3 pin and ground terminal
- Specification: +5.1V ± 4%

4) -8V DC Voltage

- Measurement point: 46F/R46 board; CN7-9 pin and ground terminal
- Specification: -12V to -6.5V

5) +24V DC Voltage

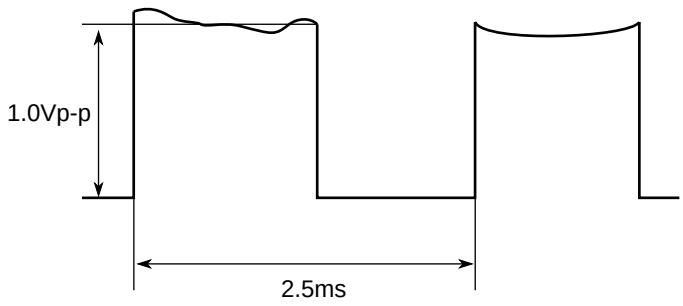
- Measurement point: 46F/R46 board; CN7-1 pin and ground terminal
- Specification: +24V ± 5%

6) +30V DC Voltage

- Measurement point: 46F/R46 board; CN7-8 pin and ground terminal
- Specification: +26V to +40V

7) Contact Image Sensor Output (SIG signal)

- Measurement point: 46F/R46 board; CN5-1 pin and ground terminal
- Specification: A waveform sample is shown below.
- Test chart: White sheet (A4 size)



5.2.2 Measurement

1) Trun the AC power OFF.
2) Carry out the disassembly procedure up to Cover assembly-top, Frame assembly-scanner, and Unit-printer.
   (Refer to the Mechanical Disassembly and Reassembly in Chapter 4.)
3) Connect extension cables to the 46F board.
4) Connect the frequency counter (for clock frequency), digital voltmeter (for power voltage) and Oscilloscope (for SIG signal). See Figure 5.1.
5) Turn AC power ON.
   Main power supply is set to "ON" (PC1 ON) by loading the document on the cover-top. (except +5V SUB)
6) Measurement
7) Turn the AC power OFF.
8) Reverse the disassembly procedures.

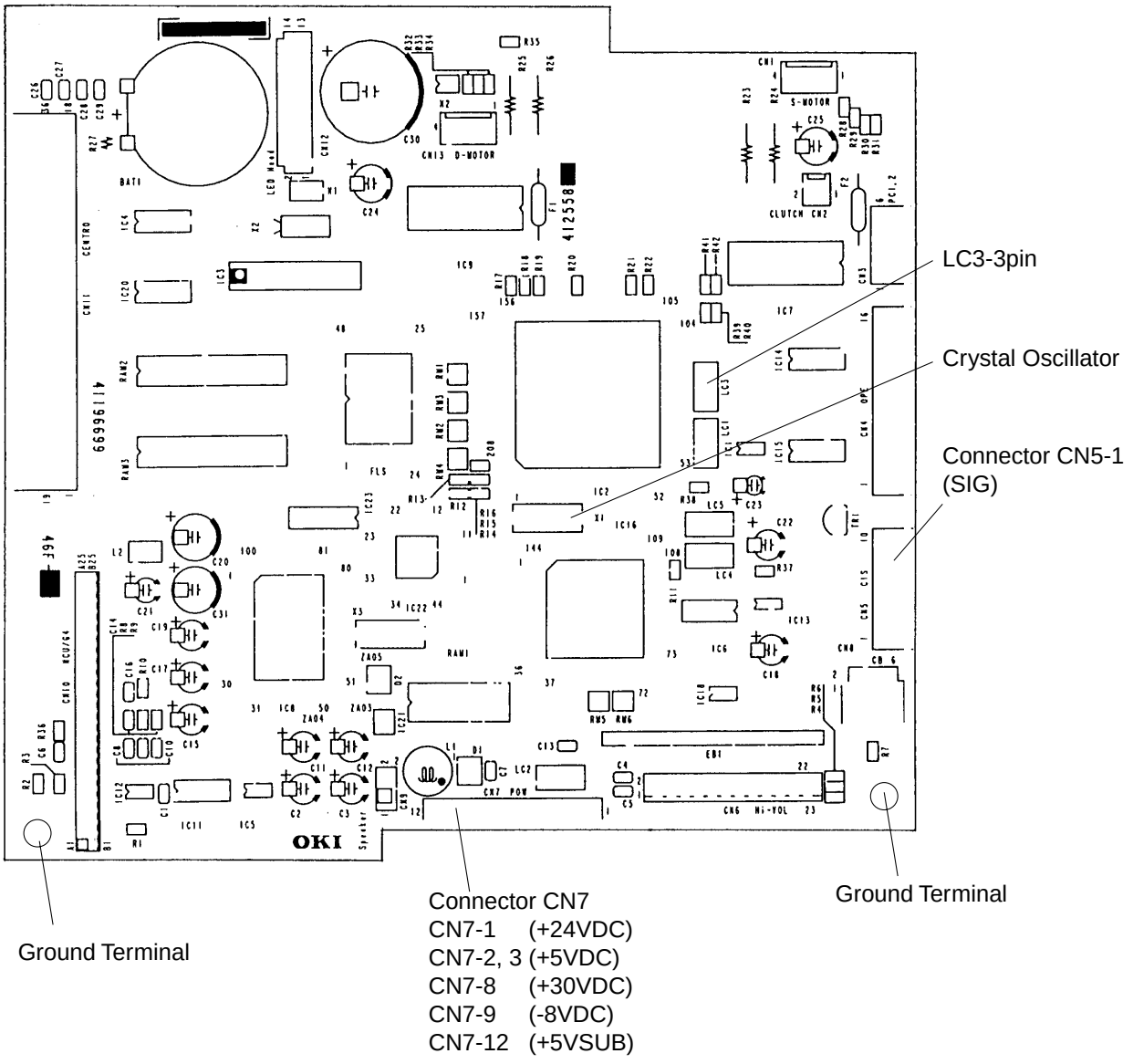


Figure 5.1 Measurement Points on 46F Board

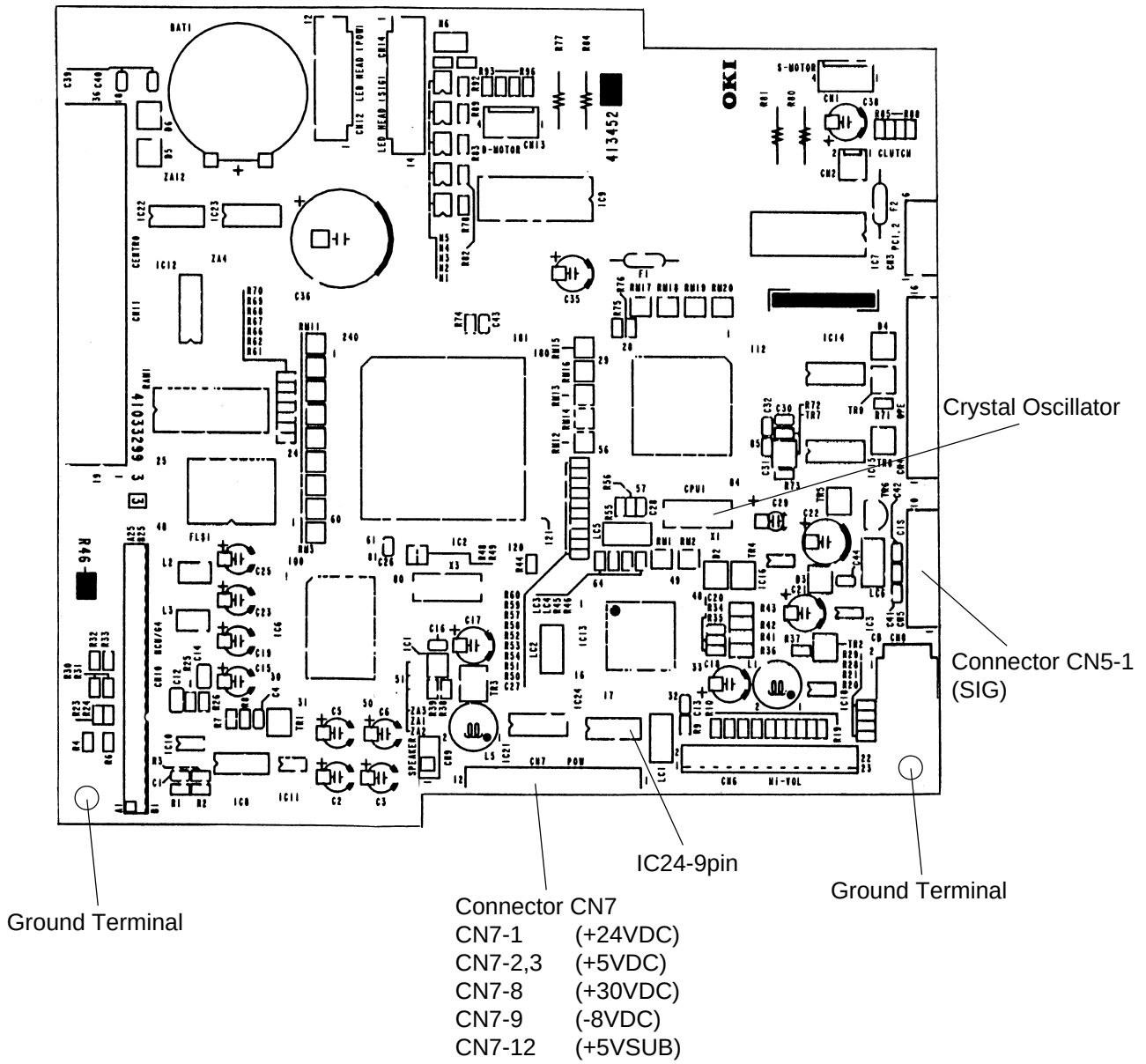


Figure 5.2 Measurement Points on R46 Board

6. CLEANING AND MAINTENANCE

6.1 Replacement of Consumable

The user (or service personnel) is required to replace the following items as consumable parts.

(1) User side

No.	Part name	Expected Use Before Replacement	Reference Item No. in Figure 6.1
1	Toner Cartrige	1,875 sheets/4% duty (ITU-T document sample No.1) (For the second or later cartridge to a new I/D Unit) * The first toner cartridge installed in a new I/D unit will have a decreased yield.	(1)
2	I/D Unit (Image drum unit)	4,500 sheets: 1 page/job, 8,000 sheets: 3 page/job, 10,000 pages/continuous	(2)

(2) Service personnel side

No.	Part name	Expected Use Before Replacement	Reference Item No. in Figure 6.1
1	Fuser Unit	30,000 sheets	(3)
2	Separation Rubber	The Separation Rubber will not require replacement for at least 30,000 documents fed.	(4)

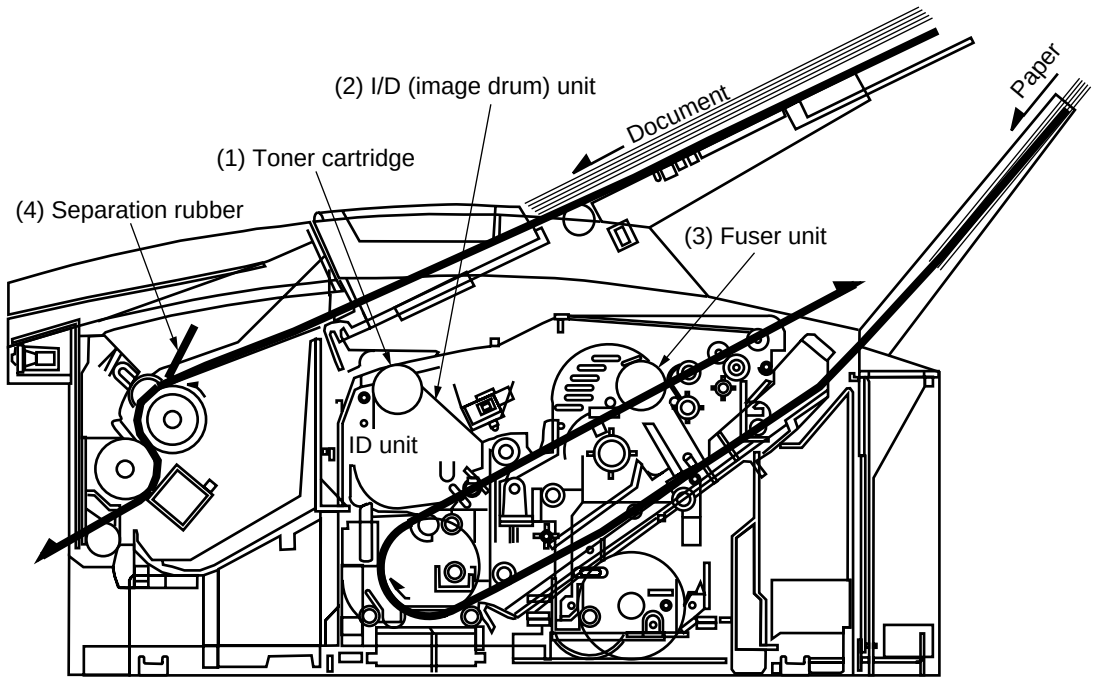


Figure 6.1 Consumable Parts

(3) Others

Table 6.1 Reliability

No.	Item	Specifications
1	Document feeder	Jam occurrence and misfeeds in the automatic document feeder will be less than one in 500 operations for all specified documents.
2	Recording paper feeder	Jam occurrence in the automatic paper feeder will be less than one in 1,500 operations and misfeeds will be less than one in 500 operations for all specified recording paper.
3	MTBF	The MTBF for the overall machine will exceed 3,000 hours of actual operation. The MTBF will be measured at a confidence level of 95% under controlled laboratory conditions. The MTBF will be based on 50% transmit and 50% receive activities.
4	Battery (for RTC)	5 years Lithium battery : Not rechargeable

6.2 Routine Inspection

Basically, the routine inspection of following items is performed about half-yearly (or every one year) after the machine is installed. The description of routine inspection is shown in Table 6.2.

Table 6.2 Routine Inspection

No.	Part name	Expected Use Before Replacement	Reference Item No. in Fig.6.2
1	Roller-scan	Clean with wet cloth.	(1)
2	Roller-ADF	Clean with wet cloth. If the surface of this roller becomes dirty and the dirt causes misfeeding of documents, perform this cleaning.	(2)
3	Contact Image Sensor	Check for accumulation of paper dust, etc. Clean with ethyl alcohol if necessary.	(3)
4	Separation Rubber	Clean with wet cloth. If this rubber is worn out, replace this rubber. (every one year)	(4)
5	LED print head	Clean the surface of the head by moving the tissue paper back and forth several times.	(5)
6	Printer unit	Clean the inside of the printer unit by using wet cloth.	
7	Lubrication	Apply MOLYKOTE EM-30L Greese (Made by Dow corning co., ltd.) oil to the following parts: a. Gears (every one year)	
8	Cleaning	Remove materials that have fallen from outside, if any.	

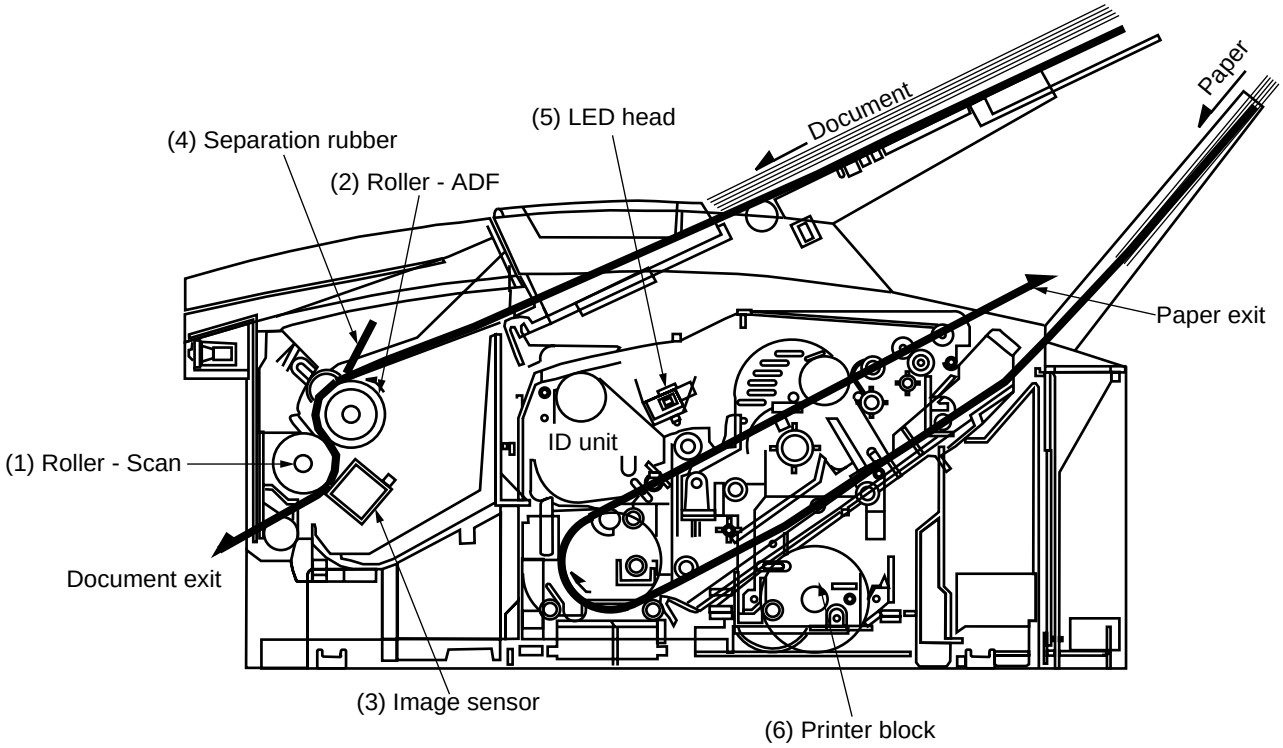


Figure 6.2 Parts of Routine Inspection

6.3 Printer Counter Display/Clear

Note: The fonts displayed on the LCD operation panel may differ from the fonts written this manual.

1. Purpose

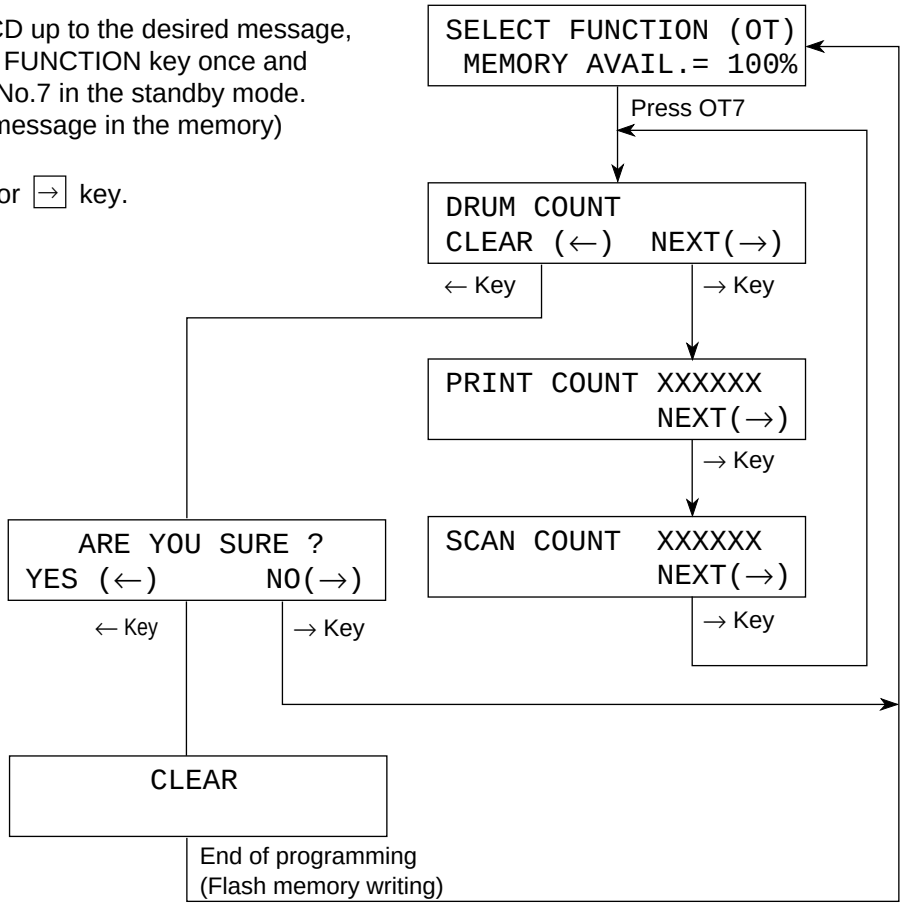
A user can clear the image drum unit and check some of the counters (such as the print counter, scan counter) by using the ← key or → key.

2-1. Procedure

The following shows the case when the service bit has been set OFF & TONER COUNT CLEAR = OFF.

Operations: **The display shows:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No.7 in the standby mode. (In case of no message in the memory)
- Press [←] key or [→] key.



Note: Clear Operation

No. of print counter and scan counter (pages) will appear but cannnot be cleared by user.

User can clear only DRUM counter.

After having cleared the drum counter, warning message will be disappeared.

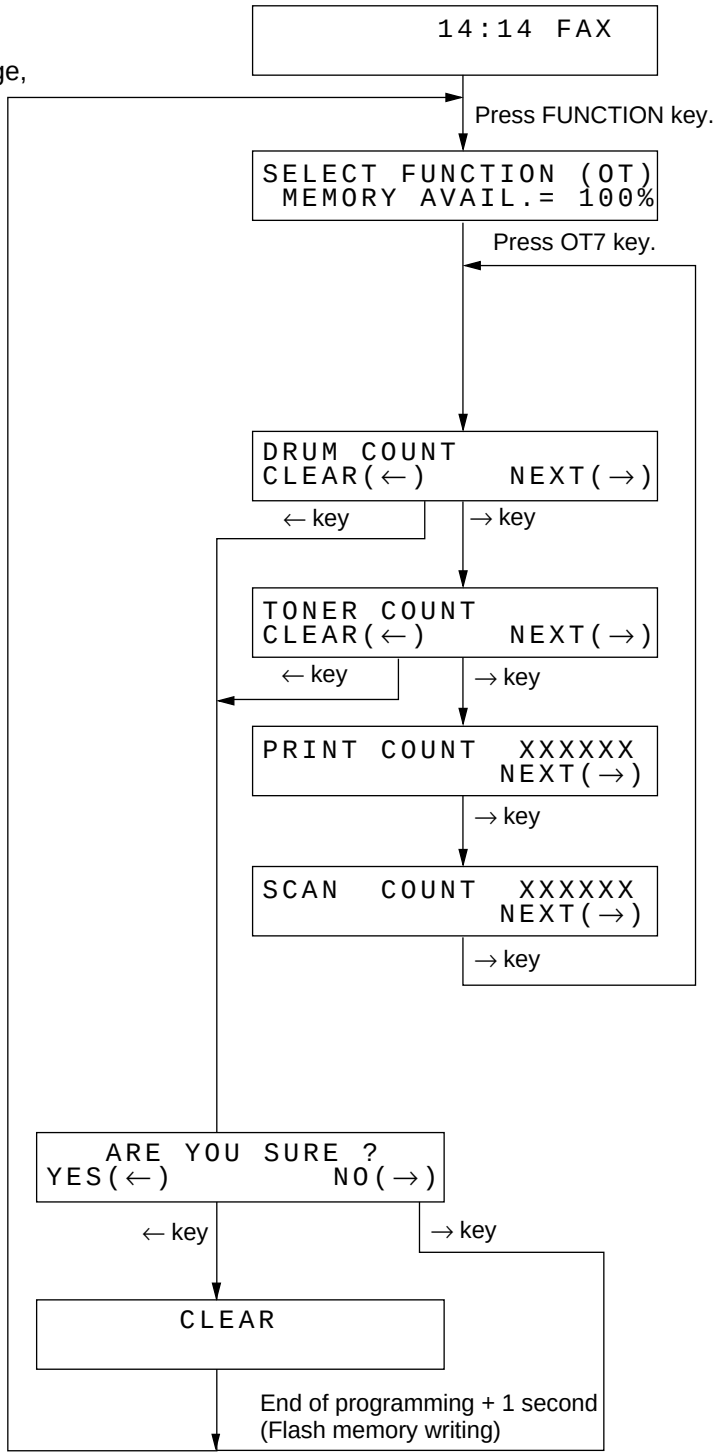
2-2. Procedure

The following shows the case when the service bit has been set OFF & TONER COUNT CLEAR = ON.

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 7 in the standby mode. (In case of no message in the memory)
- Press ← key or → key.

The display shows:



Note: Clear Operation

No. of print counter and scan counter (pages) will appear but cannot be cleared by user.
User can clear DRUM counter and TONER counter.
After having cleared the drum counter, warning message will be disappeared.

6.4 Printer Counter Display/Clear

1. Purpose

The service personnel can clear and check the following data:

- Image Drum
- Toner
- Image Drum (Total)
- Print
- Scan

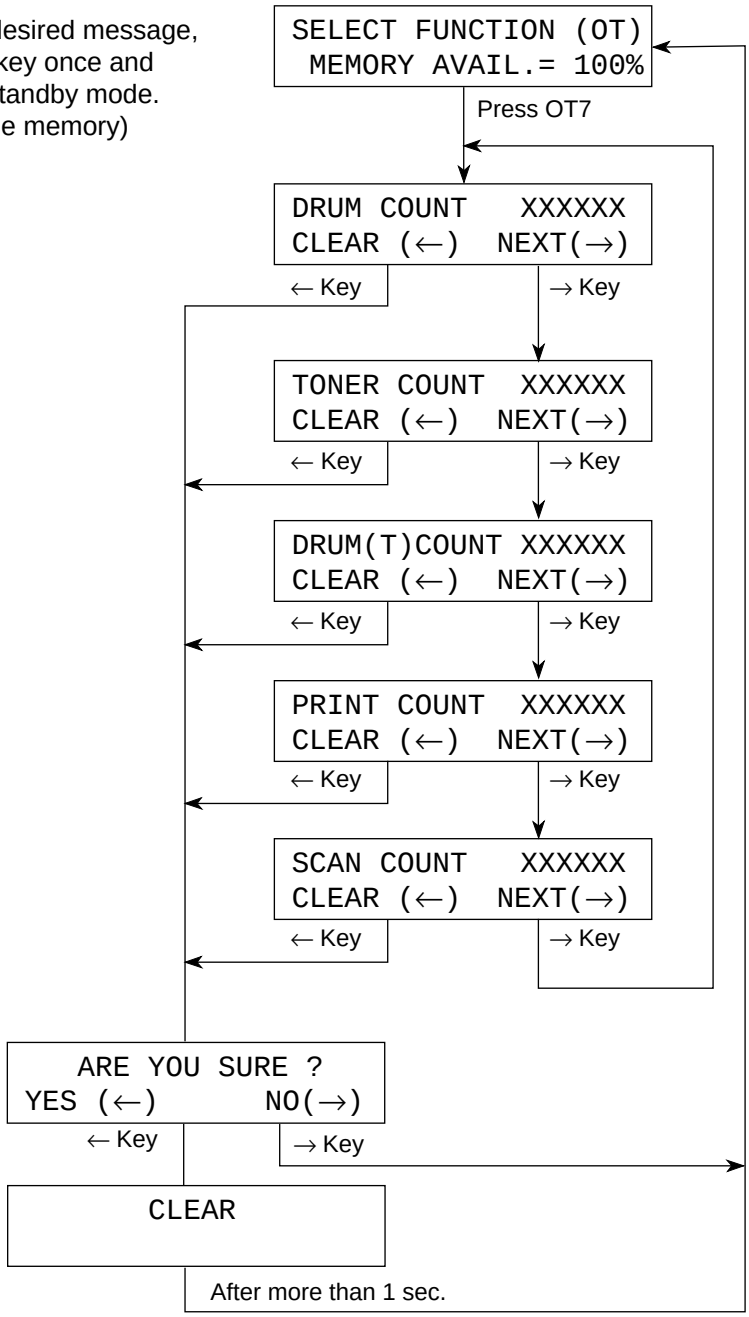
2. Procedure

The following shows the case when the service bit has been set ON.

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 7 in the standby mode. (In case of no message in the memory)
- Press [←] key or [→] key.

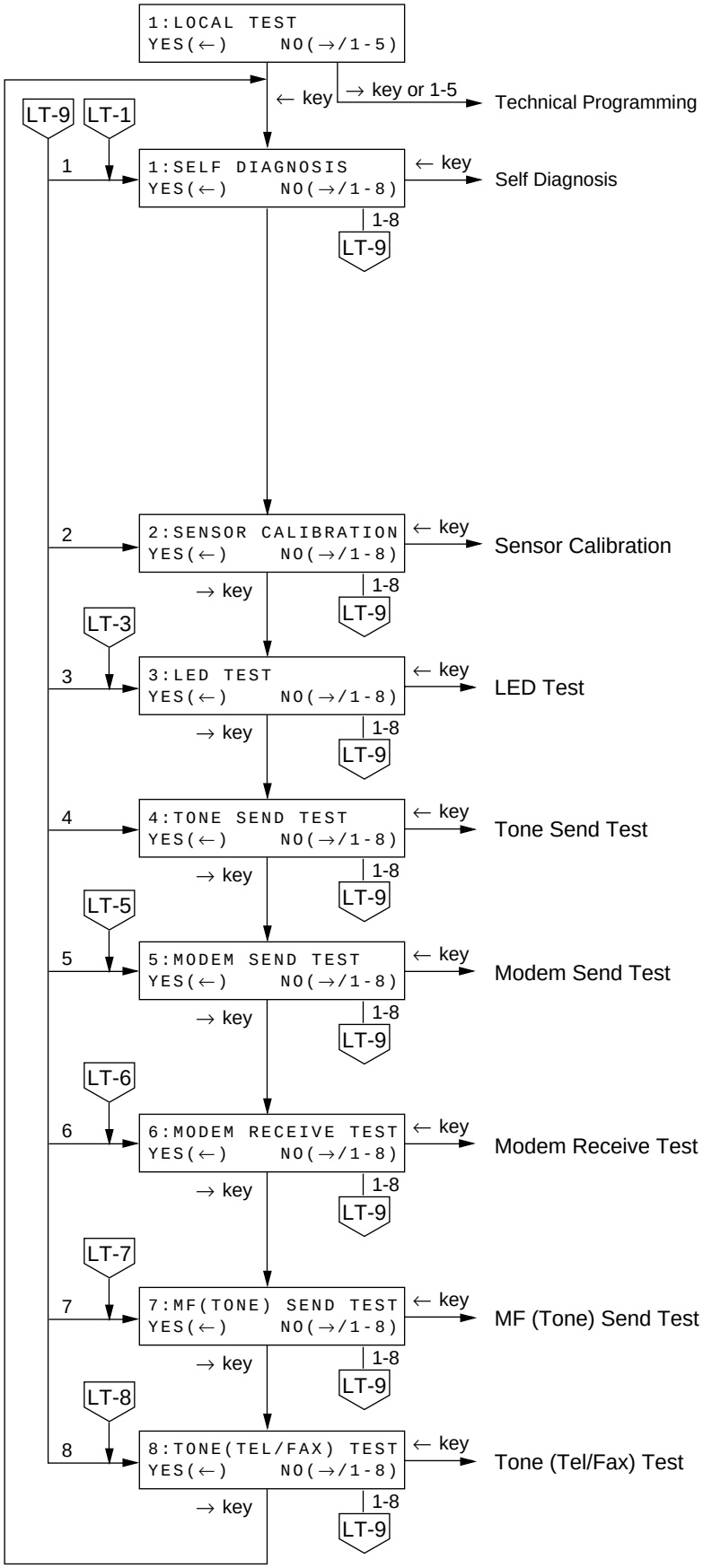
The display shows:



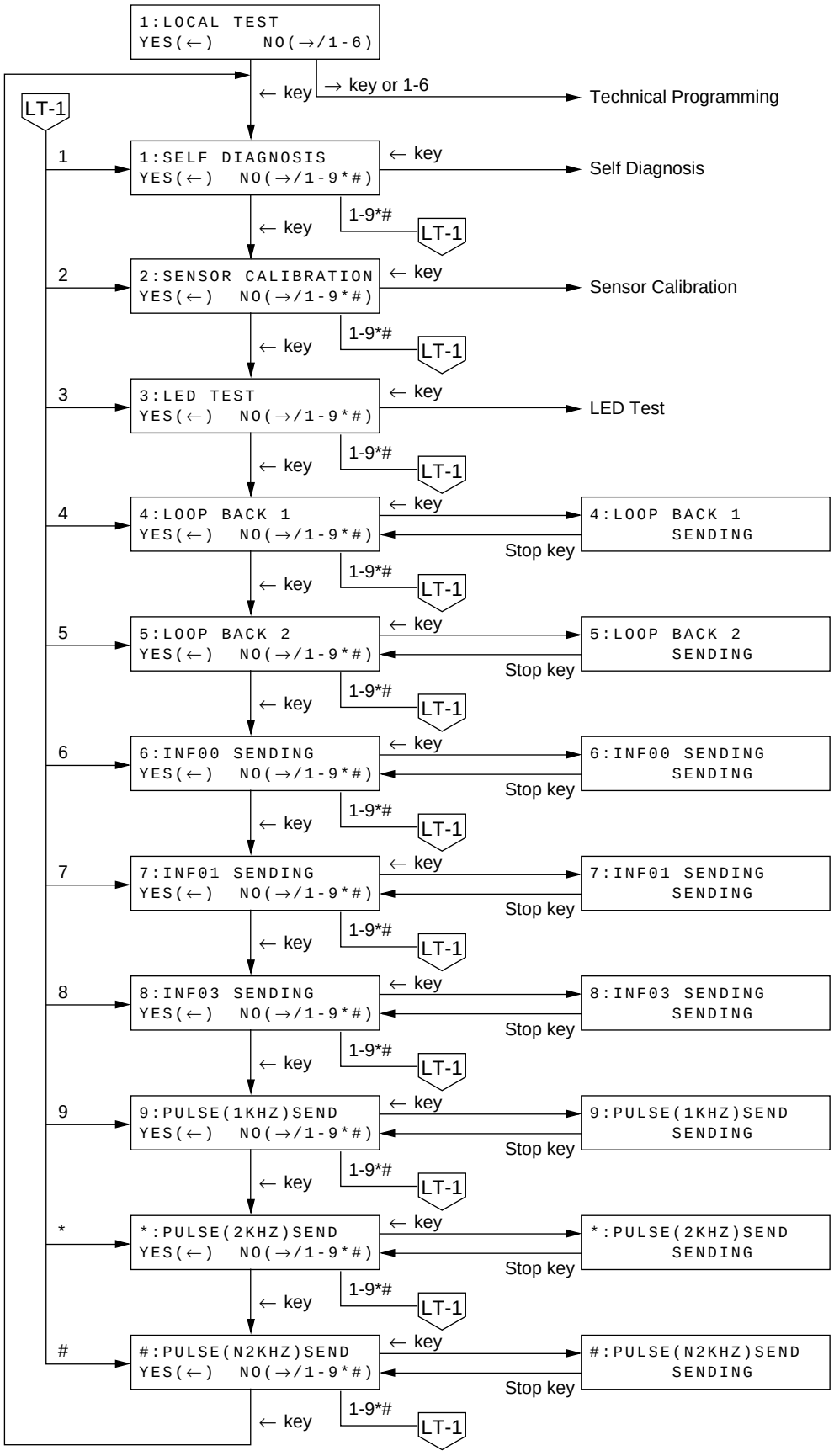
Note: DRUM (T) will be used to know the total in-use life of the machine.

6.5 Local Test

6.5.1 When G4 option board is not installed.



6.5.2 When G4 option baord is installed.



- When G4 option board is installed, the following items can be selected.
  LOOP BACK 1 to PULSE (N2KHZ) send
- These tests are continued till STOP key is pressed.

6.6 Self-diagnosis Test

1. Purpose
To check ROMs, RAMs and printing function.

2. Procedure

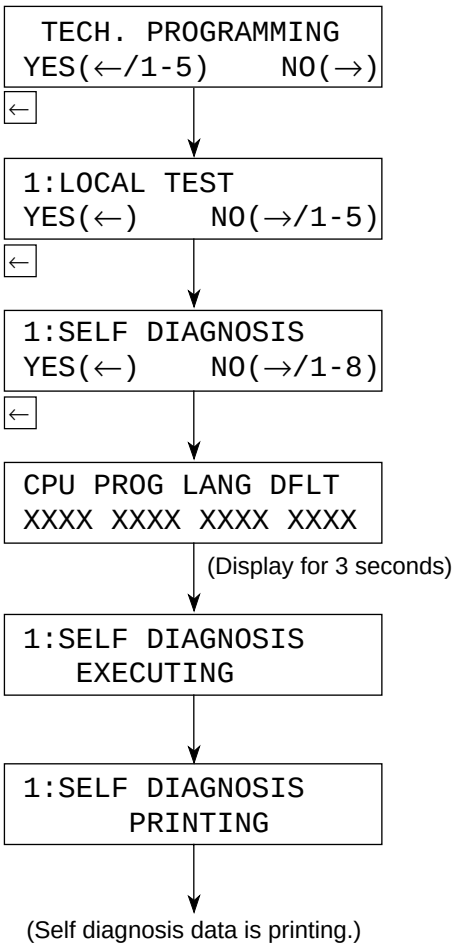
(in Case of not G4 Boad)

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and COPY key twice in the standby mode. (In case of no message in the memory)
- Press ← key.
- Press ← key.
- Press ← key to activate self-diagnosis.

(Figure 6.3 shows the printed data.)

The display shows:

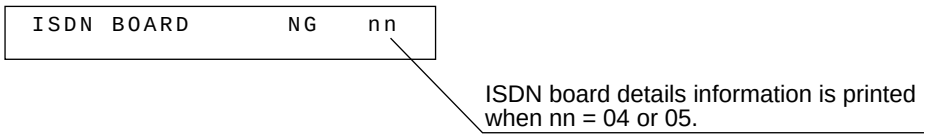


6.6.1 Self Diagnosis Report

6.6.1.1 Print conditions

1) The following self diagnosis results are always printed.
   - CPU - ROM, FLASH - PROGRAM / LANGUAGE / DEFAULT version read and hush check.
   - CPU-RAM, FLASH - RAM read/write check
   - Image processor LSI RAM check
   - Setting DEFAULT TYPE and reading clock at self diagnosis execution.

2) The following printing differs depending on the machine type of OKIFAX4550/OKIOFFICE87 and on the condition of option provided or not.
   *1 “4M” is printed for OKIFAX4550 and “6M” for OKIOFFICE87.
   *2 Printed only when MFP option is provided. “MFG:,” “MDL:,” and “DES:” information is printed out of ID character strings of PnP device. Small letters can be printed. The maximum number of each of letters and characters shall be 45.
   *3 Printed only when ISDN option is provided.
   When performing self diagnosis, ISDN board test is executed and its result (error information at power on is partially adopted) is printed.
   The print contents at ISDN error are as shown below.



nn=01: Waiting PC loading
When turning on power, BOOT2 signal from HOST side was in PC loading mode.

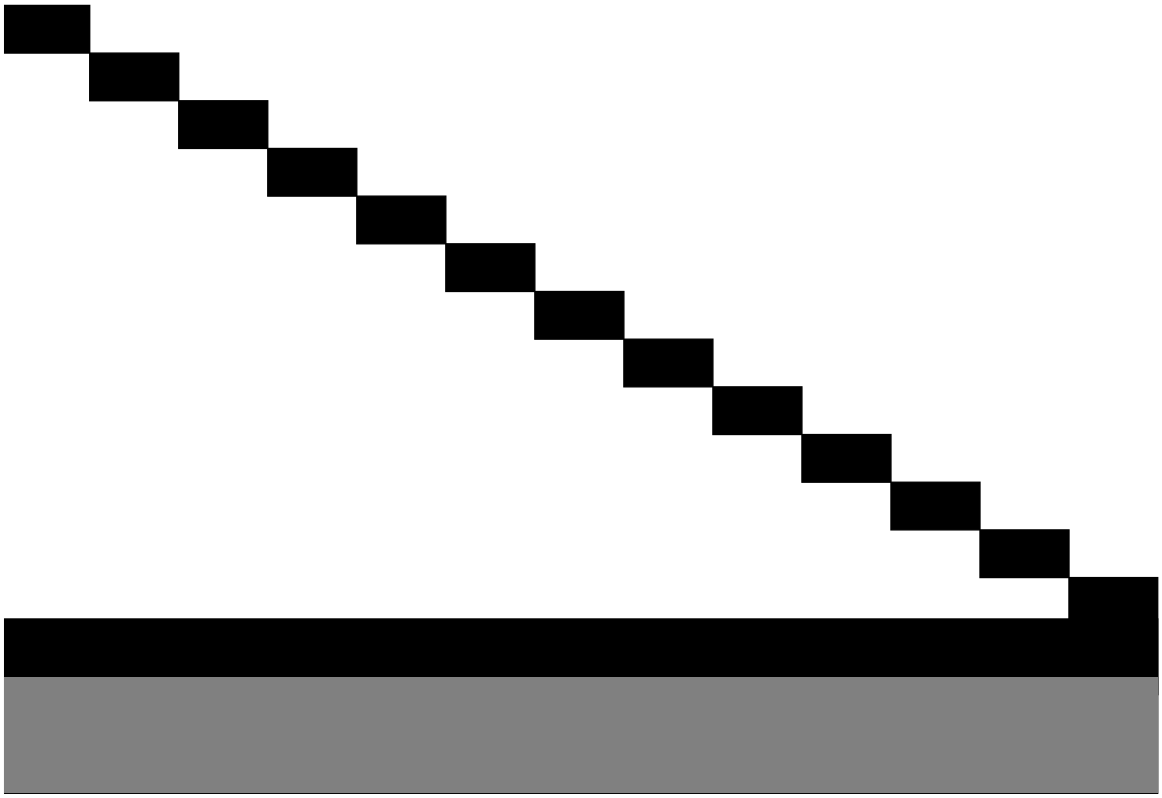
nn=02: Board faulty
When turning on power, PROGRAM HUSH of ISDN board was no good.

nn=03: Board faulty
Initial sequence between boards was not executed in spite of elapse of 10 seconds after turning on power. (Status window did not obtain normal value.)

nn=04 Board faulty
Initial sequence of ISDN LSI was not executed when turning on power. (No response to command, Response no good)

nn=05: ISDN LSI faulty
ISDN LSI test function (ROM/RAM test, loop test) resulted no good.

* Figure 6.3 shows a printed sample.



```
CPU-ROM   VERSION   aaaa
          HASH      OK    hhhh
CPU-RAM             OK
PROGRAM   VERSION   aaaa
          HASH      OK    hhhh
LANGUAGE  VERSION   aaaa
          HASH      OK    hhhh
DEFAULT   VERSION   aaaa
          HASH      OK    hhhh
RAM1      4M        OK                          *1
RAM2                OK
DEFAULT TYPE        01    03/03/2000  12:00
DEVICE ID           MFG:OKI DATA CORP;          *2
                    MDL:FX-046FAX;              *2
                    DES:OKI FX-046FAX;          *2
OPT-RAM   4M        OK                          *3
ISDN BOARD          OK
CPU-ROM   VERSION   aaaa
          HASH      OK    hhhh
CPU-RAM             OK
PROGRAM   VERSION   aaaa
          HASH      OK    hhhh
RAM       2M        OK
DPRAM     2K        OK
```

a: Alphabet and digit
h: Hexadecimal numeral
n: Digit

Figure 6.3 Self-diagnosis Data

6.7 Sensor Calibration Test

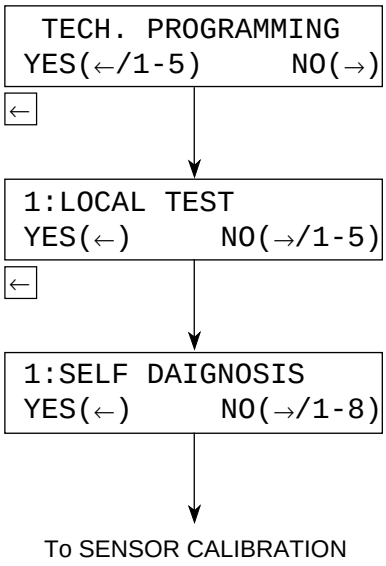
1. Purpose

To adjust the linearity of output levels of contact image sensor.

Operations:

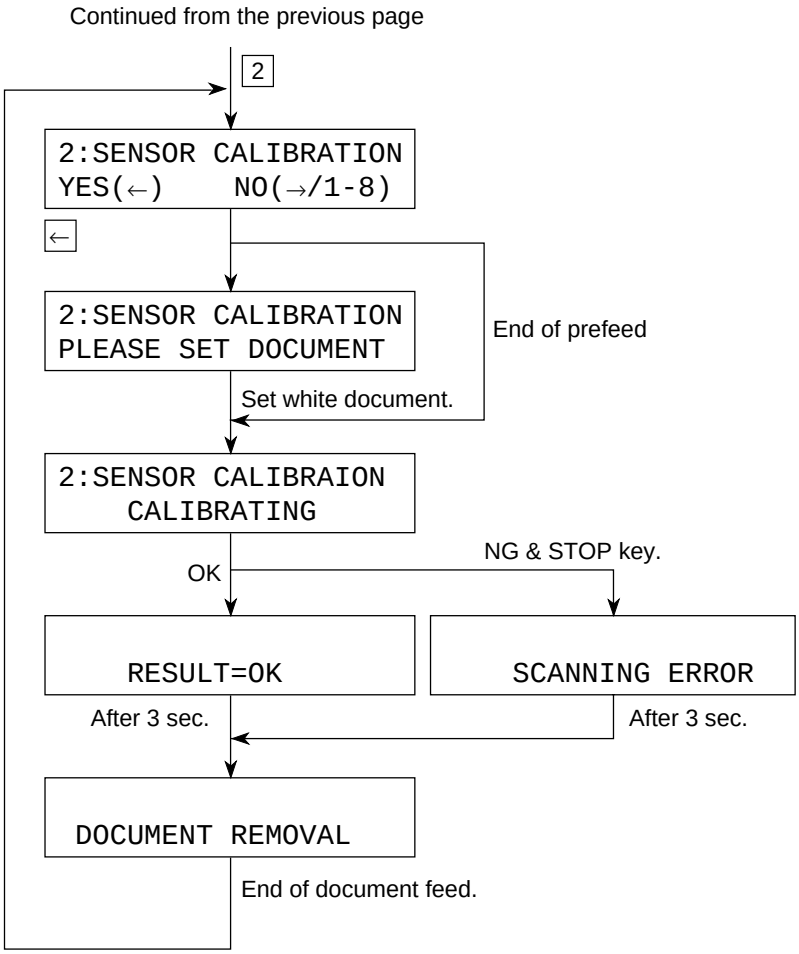
- To bring the LCD up to the desired message, press SELECT FUNCTION key once and COPY key twice in the standby mode. (In case of no message in the memory)
- Press ← key.
- Press ← key.

The display shows:



Operations: **The display shows:**

- Enter "2".
- Press [←] key.
- Load document(s).
  For adjustment of levels, use white plain bond paper(s) of NA Letter or A4 size.
- Observe and check the document feed operation.
  Check that the followings do not occur:
  Document skew.
  Multiple document feeding.
  No feeding.



Note: After adjustment of levels, check the copy quality by copying test charts or documents.

6.8 LEDs Test

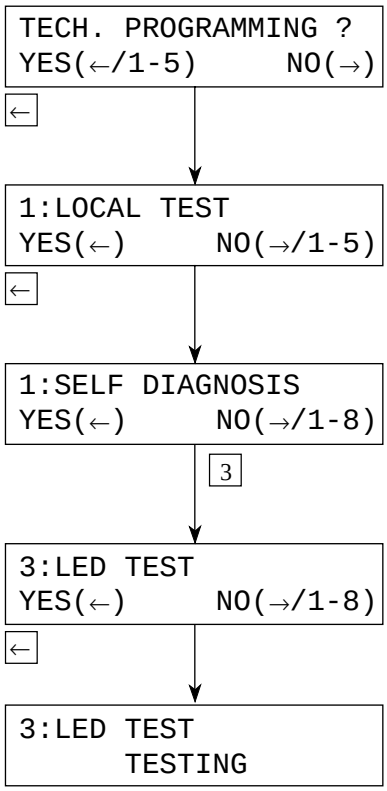
1. Purpose

To check all LEDs on operation panel by lighting.

2. Procedure

Operations: **The display shows:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and COPY key twice in the standby mode. (In case of no message in memory)



- Press ← key.
- Press ← key.
- Enter "3".
- Press ← key.
- Observe and check that LEDs are blinking.
  - All LEDs will be sequentially turned on for one second in the following order.

(Start)

→ ALARM → DARK → NORMAL → LIGHT → STD → FINE →
all LED off ← all LED on ← PHOTO ← EX.FINE ←

1 second interval.

- After the checking, press STOP key.

6.9 Tone Send Test

1. Purpose

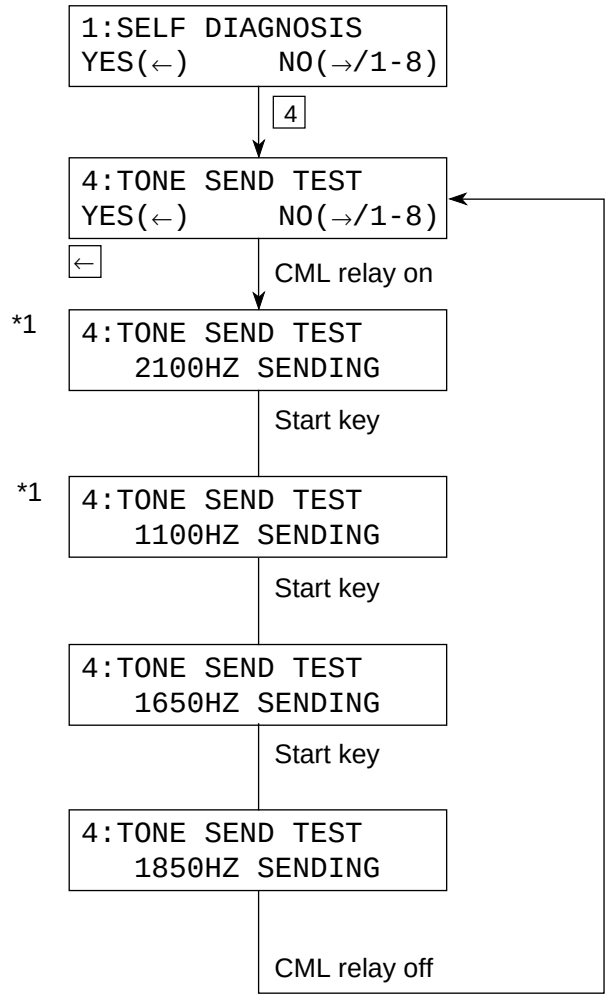
To send the G3 tonal frequencies to the line.

2. Procedure

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and [←] key twice. (In case of no message in memory)
- Enter "4".
- Press [←] key.
- After the checking, press STOP key or end of the transmission.

The display shows:



*1: When indicating "2100Hz, 1100Hz, 1650Hz or 1850Hz SENDING", these tests are continued till START key or STOP key is pressed.

6.10 High-speed Modem Send Test

1. Purpose

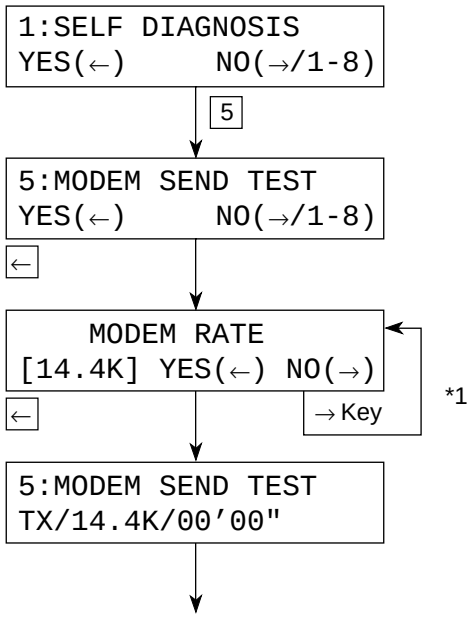
To check the telephone line quality in combination with a remote station programmed to the high-speed modem receive test mode.

2. Procedure

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and [←] key twice. (In case of no message in memory)
- Enter "5".
- Press [←] key.
- Set MODEM rate by [→] key.
- Press [←] key.
  All zero data will be continuously sent.
- After the test, press STOP key.

The display shows:



(For detail, see Figure 6.4)

*1: → 33.6K → 28.8K → 14.4K → 12.0K → 9.6KT (V.17) → 7.2KT (V.17) →
← 0.3K ← 2.4K ← 4.8K7.2K (V.29) ← 9.6K (V.29)

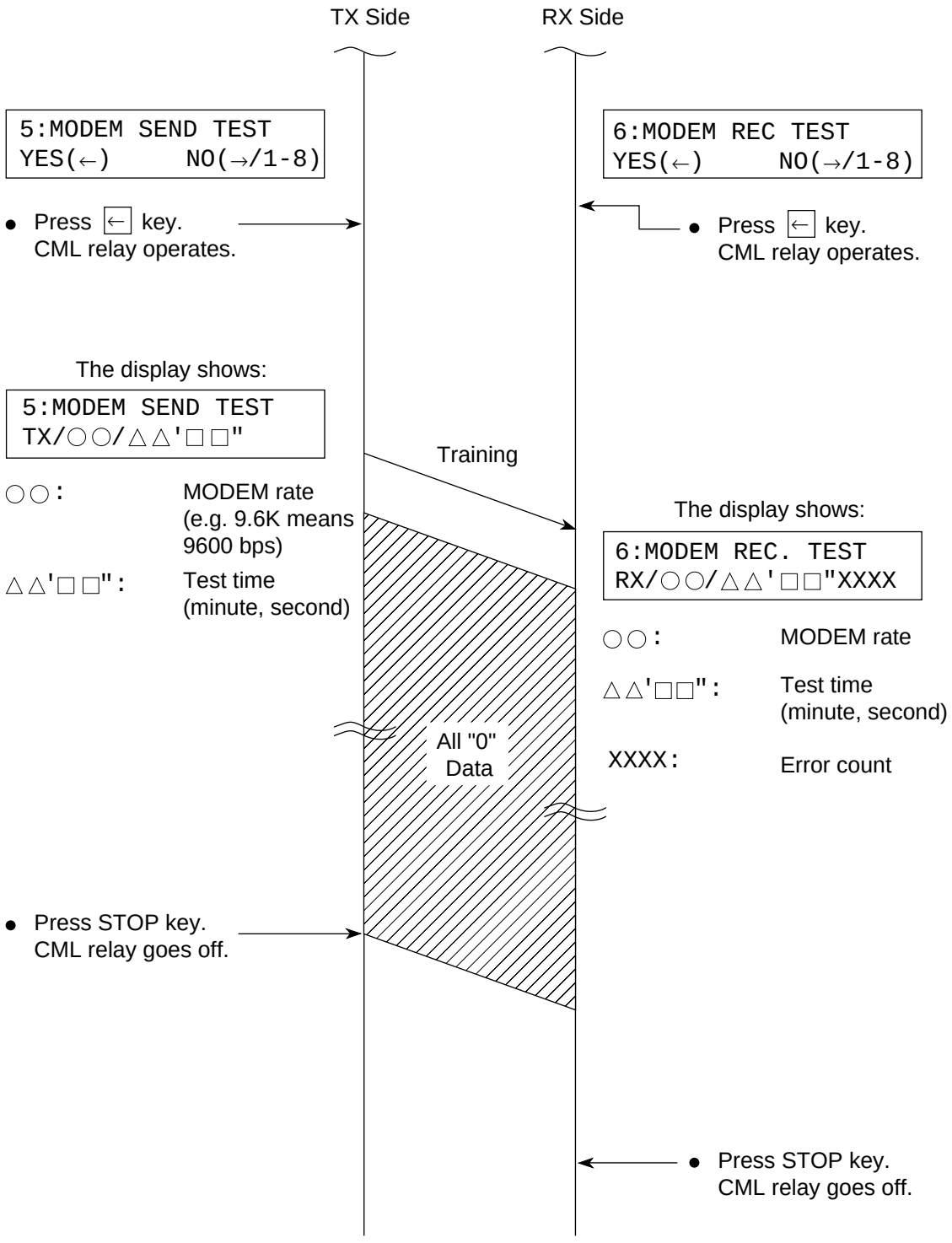


Figure 6.4 High-speed Modem Send and Receive Test

6.11 High-speed Modem Receive Test

1. Purpose

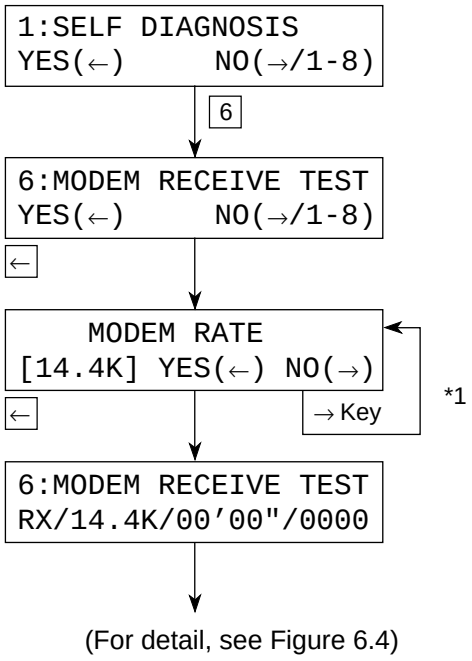
To check the telephone line quality in combination with a remote station programmed to the high-speed modem send test mode.

2. Procedure

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and [←] key twice. (In case of no message in memory)
- Enter 6.
- Press [←] key.
- Set MODEM rate by [→] key.
- Press [←] key.
- After the test, press STOP key.

The display shows:



(For detail, see Figure 6.4)

*1: → 14.4K → 12.0K → 9.6KT (V.17) → 7.2KT (V.17) → 9.6K (V.29) → 7.2K (V.29) → 4.8K → 2.4K →

6.12 MF Send Test

1. Purpose

To send the multi-frequencies of tone dialling to the line.

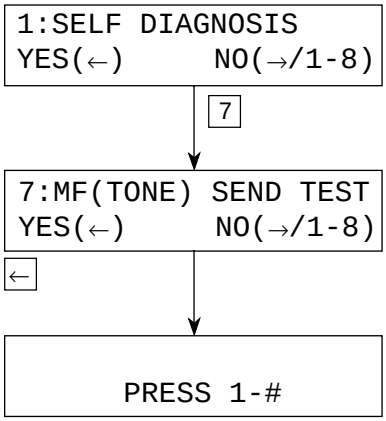
2. Procedure

Operations:

- To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and [←] key twice. (In case of no message in memory)
- Enter 7.
- Press [←] key.
- Press 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, * or # key.
  MF tone corresponding to the key pressed will be sent until the next key is pressed.
- After the test, press STOP key.
  Frequencies of MF tones are as follows:

1	697 Hz/1209 Hz
2	697 Hz/1366 Hz
3	697 Hz/1477 Hz
4	770 Hz/1209 Hz
5	770 Hz/1366 Hz
6	770 Hz/1477 Hz
7	852 Hz/1209 Hz
8	852 Hz/1366 Hz
9	852 Hz/1477 Hz
0	941 Hz/1366 Hz
*	941 Hz/1209 Hz
#	941 Hz/1477 Hz

The display shows:



6.13 Tone (TEL/FAX)

1. Purpose

To check the pseudo-ring back tone of TEL/FAX automatic switching.

2. Procedure

Operations:	The display shows:
• To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and [←] key twice. (In case of no message in memory)	1:SELF DIAGNOSIS YES(←) NO(→/1-8)
• Enter 8.	[8] 8:TONE(TEL/FAX) TEST YES(←) NO(→/1-8)
• Press [←] key.	[←] 8:TONE(TEL/FAX) TEST TONE SENDING
• After the test, press STOP key.	

6.14 Protocol Dump Data Printing

1. Purpose

To analyze the transmitted/received G3 protocol signals.

2. Procedure

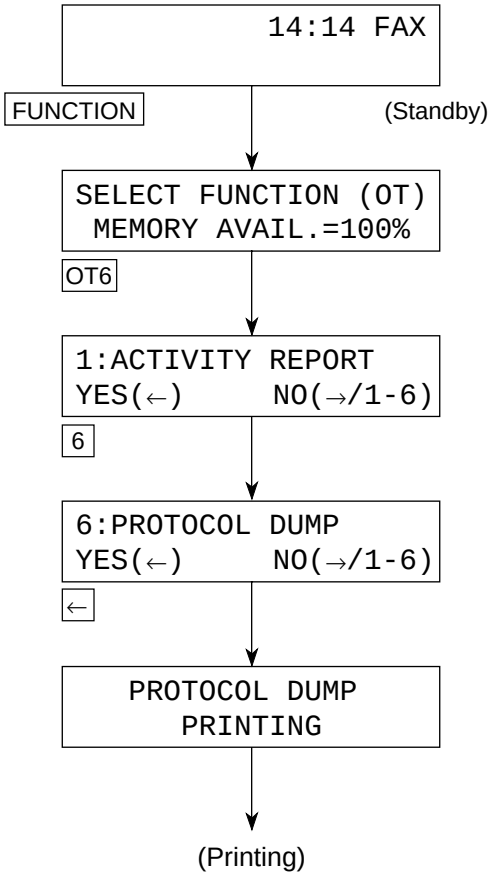
- Manual print-out of the last communication.

(a) Manual print-out

Operations:

- Press SELECT FUNCTION key, provided that the service bit is ON.
- Press one-touch key No.6
- Enter 6.
- Press ← key.

The display shows:



6.14.1 G3 Protocol Dump

Purpose:
To allow the serviceman to obtain a list of protocol signals transferred between the transmitter and receiver.

Print conditions:
- Modem trace information for each TX/RX is printed. (Informeation for RX is added on 2nd page.)
- Modem result code is printed.
- JM information is moved in the arrangement of CM information.
- "00" is printed always since the received SID on the 2nd page is invalid.

Method:
The report will be manually printed out for maintenance purpose. If the previous communication is G3, G3 communication protocol dump is printed out. If it is G4, the G4 communication protocol dump is printed.

1. Title of the report
2. Date and time when the report was printed
3. Sender ID
4. Date of communication
5. Time of communication
6. One message transmission/reception time
7. Identification of remote station
   • CSI and/or telephone number
8. Mode of transmission/reception according to ITU-T designation
9. Total number of pages in communicaiton
10. Identification of the result of the communication
11. Service code
12. TX: DIS/DTC/DCS/NSF/NSS/NSC
13. Transmitted telephone number
14. Transmitted SEP/SUB
15. Transmitted SID
16. Common information of ITU-T V.34 TX/RX
17. Modem trace
18. RX: DIS/DTC/DCS/NSF/NSS/NSC (page 2)
19. Received telephone number
20. Received SEP/SUB (page 2)
21. Received SID (page 2)
22. Common information of ITU-T V.34 TX/RX (page 2)
23. Modem trace (page 2)

G3 Protocol Dump Image

PROTOCOL DUMP P1

```
                                                                12/24/1998  19:00
                                                                ID=OKI TAKASAKI


       DATE      TIME      S,R-TIME   DISTANT STATION ID        MODE      PAGES      RESULT

       12/24     18:56      00'33"    12345678901234567890123 4  TX         002      OK    0000

FCF
TX |          NSS     PPS_MPS   PPS_EOP     DCN
RX | NSF  DIS     CFR         MCF         MCF

TX |
RX |

TX |
RX |

TX |
RX |

TRANSMITTED FRAME

DIS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DTC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DIS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
NSF
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSS
FF C8 C4 00 00 84 80 30 40 E4 10 40 B8 39 20 0C 0C 0C 0C 30 82 4A AA 82 42 92 12 CA 04 92 D2 F2
80 40 80 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
CSI/CIG/TSI
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
SEP/SUB
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
SID
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
V34
CM              JM
00 00 00 00     00 00 00 00

SYMBOL RATE(SPS)             =
DATA SIGNALLING RATE(BPS)    =
RESULT 00

MODEM TRACE
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

Figure 6.5 (1/2) Protocol Dump Report (G3)

PROTOCOL DUMP P2

12/24/1998 19:00
ID=OKI TAKASAKI

```
RECEIVED FRAME

DIS
FF C8 01 00 73 17 22 00 00 00 00 00 00 00 00 00 00 00 00
DTC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DCS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
NSF
FF C0 04 00 00 84 80 08 40 F4 10 40 F9 7D 20 0C 0C 0C 0C 90 F2 52 72 F2 12 04 92 D2 F2 80 F0 80
40 80 50 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
CSI/CIG/TSI
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
SEP/SUB
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
SID
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
V34
CM              JM
00 00 00 00     00 00 00 00

MODEM TRACE
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

Figure 6.5 (2/2) Protocol Dump Report (G3)

6.14.2 Analysis from the data

The printed out data permits to analyze G3 facsimile communication protocol signals between two facsimile machines. Figure 6.5 (2/2) shows the result of an analysis on the printed data referring to Figure 6.5 (1/2) (Protocol dump data).

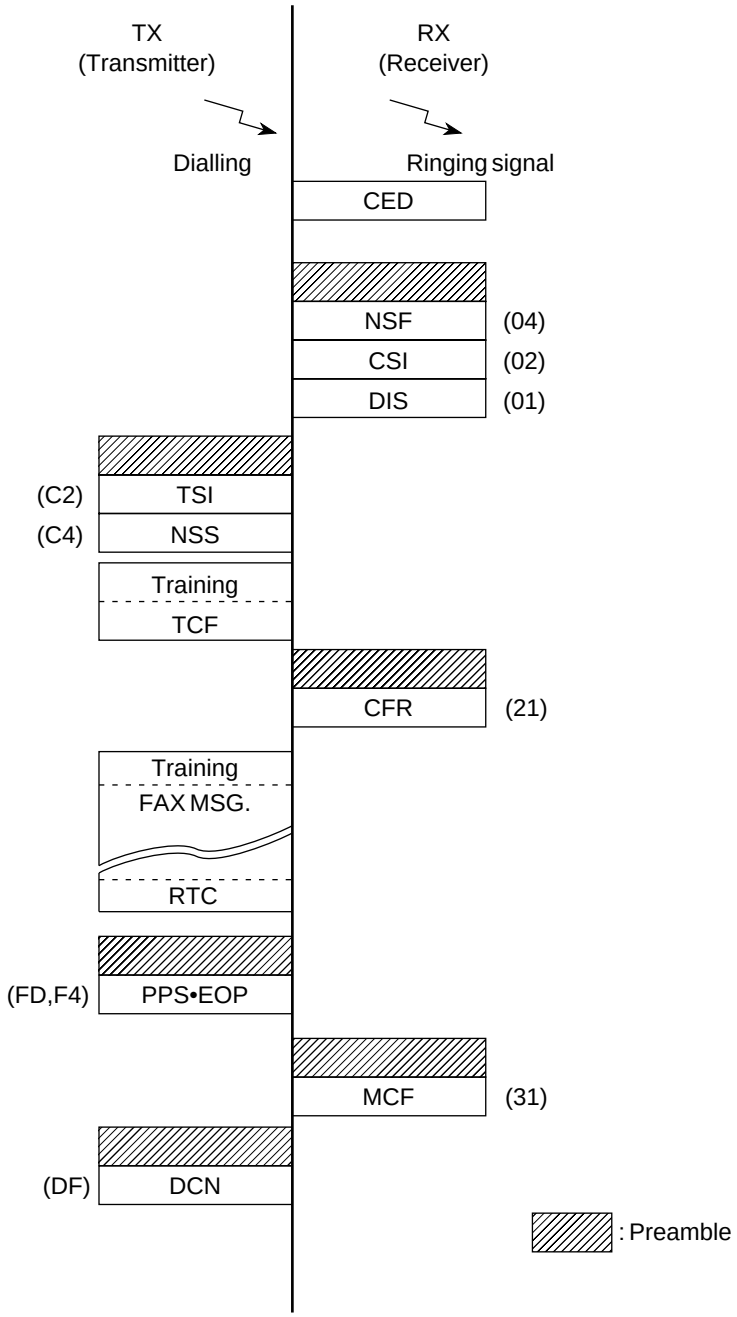


Figure 6.6 Result of Analysis (Example)

6.14.3 FCF (Facsimile Control Field) conversion table

Table 6.2 shows all FCF signals which are needed to analyze the printed out protocol dump data.

Some signals have two different hexadecimal codes in accordance with the calling party or called party.

Table 6.2 FCF Signals Conversion Table

Abbreviation	Hex. Codes		Description of function
NSF	04		Non-Standard Facilities
CSI	02		Called Subscriber Identification
DIS	01		Digital Identification Signal
NSC	84		Non-Standard Facilities Command
CIG	82		Calling Subscriber Identification
DTC	81		Digital Transmit Command
NSS	44	C4	Non-Standard Set-Up
TSI	42	C2	Transmitting Subscriber Identification
DCS	41	C1	Digital Command Signal
CFR	21	A1	Confirmation to Receive
MCF	31	B1	Message Confirmation
FTT	22	A2	Failure to Train
MPS	72	F2	Multi-Page Signal
EOM	71	F1	End of Message
EOP	74	F4	End of Procedure
RTP	33	B3	Retrain Positive
RTN	32	B2	Retrain Negative
PIP	35	B5	Procedure Interrupt Positive
PIN	34	B4	Procedure Interrupt Negative
PRI-MPS	7A	FA	Procedure Interrupt-MPS
PRI-EOM	79	F9	Procedure Interrupt-EOM
PRI-EOP	7C	FC	Procedure Interrupt-EOP
DCN	5F	DF	Disconnect
CRP	58	D8	Command Repeat
CTC	48	C8	Continue to Correct
CTR	23	A3	Response to Continue to Correct
EOR	73	F3	End of Retransmission
ERR	38	B8	Response to End of Retransmission
FCD	60		Facsimile Coded Data
PPS	7D	FD	Partial Page Signal
PPR	3D	BD	Partial Page Request
RCP	61		Return to Control for Partial Page
RNR	37	B7	Receiver not Ready
RR	76	F6	Receiver Ready

6.14.4 G4 Protocol Dump

Purpose:
To allow the serviceman to obtain a list of protocol signals transmitter and receiver.

Method:
The report will be manually printed out for maintenance purpose.
If it is G4, the G4 communication protocol dump is printed out.

1. Title of the report
2. Date and time when the report was printed
3. Sender ID
4. Date of communication
5. Time of communication
6. One message transmission/reception time
7. Identification of remote station
   • CSI and/or telephone number
8. Mode of transmission/reception according to ITU-T designation
9. Total number of pages in communicaiton
10. Identification of the result of the communication
11. Service code
12. D channel
13. B channel
14. COMMN MODE
15. COMMN SPEED
16. FLOW CONTROL PARAM.
17. TID
18. SETUP
19. DISC
20. CR/CN, CA/CC, CQ/CI, RQ/RI, SQ/SI (page 2)
21. TBR/TCC/TCR/TCA (page 2)
22. CSS (page 2)
23. RSSP/RSSN (page 2)
24. CD/CL (page 2)
25. RDCLP (page 2)
26. CDS (page 2)
27. CDUI (page 2)

Protocol Dump

The printing image is as follows:

PROTOCOL DUMP P1

08/25/2000 19:00
ID=OKI TAKASAKI

DATA	TIME	S,R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT
04/19	14:49	00’07"	OKI SHIBAURA(6412)	TX-G4	02	OK 0000

Dch.

```
TX | SETUP                      CONN-ACK +Bch+ DISC    REL-C
RX |      STATUS SETUP-ACK CONN          +Bch+     REL
TX |
RX |
```

Bch.

```
TX | SABM   SQ   CR   TCR   CSS    CDCL     CDS CDUI CDPB     CDUI CDPB      CDUI CDPB     CDUI
CDUI
RX |      UA   SF   CC    TCA   RSSP    RDCLP             RDPBP          RDPBP           RDPBP
TX | CDE     CQ   DISC
RX |    RDEP   CF     UA
TX |
RX |
TX |
RX |
```

```
COMMN MODE
T.90

COMMN SPEED
64 kbps

FLOW CONTROL PA RAM.
2048(SPS)/7(SWS)/2048(RPS)/7(RWS)

TID
081-0273242117 =OKITAKASAKI


SETUP
08 01 05 05 04 02 88 90 6C 02 00 80 70 0B 80 30 32 37 33 32 38 30 30 30 31 7C 03 88 90 A9 7D 02
91 A1 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

DISC
45 16
```

Figure 6.7 (1/2) Protocol Dump P1 (G4)

PROTOCOL DUMP P2

```
CR/CN
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00

CA/CC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00

CQ/CI
00 00 00 00 00

RQ/RI
00 00 00 00 00

SQ/SI
00 00 00 00 00

TBR
 00

TCC
00

TCR
09 E0 00 00 00 01 00 C0 01 0B 00 00 00 00 00 00

TCA
09 D0 00 01 00 01 00 C0 01 0B 00 00 00 00 00 00

CSS
0D 6F 01 2A 0A 18 30 38 31 2D 3D 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 0B 0E
39 37 2D 30 38 2D 32 37 2D 31 34 2D 34 34 02 03 0E 01 01 08 01 01 C1 08 A4 06 80 01 02 81 01 00
E8 2F 00 01 79 00 E0 1C C1 10 50 61 6E 61 66 61 78 20 55 46 2D 42 38 30 20 20 C2 02 36 35 C4 04
30 30 30 30 E1 0B E0 06 C0 01 01 C1 01 01 C1 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

RSSP/RSSN
0E 69 01 2A 09 18 30 38 31 2D 3D 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 0B 0E
39 38 2D 30 36 2D 30 32 2D 31 33 3A 34 36 02 03 0E 01 01 08 01 01 C1 08 A4 06 80 01 02 81 01 00
E8 29 00 01 79 00 E0 16 C1 10 50 61 6E 61 66 61 78 20 55 46 2D 42 38 30 20 20 C2 02 36 35 E1 0B
E0 06 C0 01 01 C1 01 01 C1 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

CDCL
3D 58 12 01 3C C1 4D A4 4B 80 01 02 81 01 00 A2 3C A2 32 30 08 80 02 26 C0 81 02 36 CE 30 08 80
02 2F 6D 81 02 43 2C 30 08 80 02 2F 6C 81 02 43 2C 30 08 80 02 2E 23 81 02 41 25 30 08 80 02 36
CE 81 02 4D 80 A4 06 8B 01 04 8B 01 01 E4 05 E1 03 C0 01 01 E8 04 00 01 49 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

RDCLP
3E 40 C1 3E A4 3C 80 01 02 81 01 00 A2 25 A2 1E 30 08 80 02 26 C0 81 02 36 CE 30 08 80 02 2F 6C
81 02 43 2C 30 08 80 02 2F 6D 81 02 43 2C A4 03 8B 01 04 E4 0D E0 06 02 01 02 02 01 03 E1 03 C0
01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
CDS
2D 40 29 03 30 30 31 C1 39 A4 37 80 01 02 81 01 00 A2 28 A2 1E 30 08 80 02 26 C0 81 02 36 CE 30
08 80 02 2F 6D 81 02 43 2C 30 08 80 02 2F 6C 81 02 43 2C A4 06 8B 01 04 8B 01 01 E4 05 E1 03 C0
01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
CDUI
01 00 A2 03 02 01 00 A2 1B 02 01 02 31 16 A4 08 80 02 26 C0 81 02 36 CE A6 05 A1 03 82 01 01 E9
03 C0 01 00 A3 80 31 06 A2 04 80 02 06 C0 24 80 04 82 07 90 01 01 00 00 00 00 00 00 00 00 00 00
01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

Figure 6.7 (2/2) Protocol Dump P2 (G4)

6.15 System Reset

1. Purpose

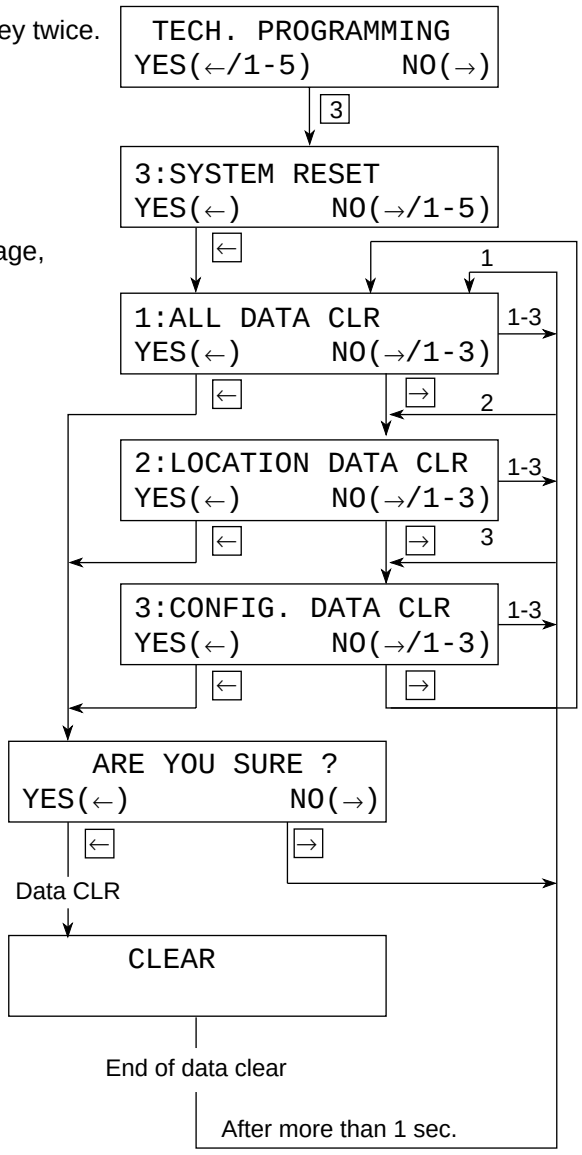
To clear or initialize the following data:
(a) Location data
(b) Configuration data (default)

2. Procedure

Operations: **The display shows:**

- Press SELECT FUNCTION key, COPY key twice. (In case of no message in the memory)
- Enter 3.
- To bring the LCD up to the desired message, press ← key and → key.

Note: ALL DATA CLEAR is to clear or initialize (a) to (b).



6.16 Service Codes

1) The service code can be printed on Activity Report to recognize the result of each communication.

2) The activity report indicates the code ”0000", should a communication terminates on normal status as a service code.

3) The activity report indicates one of the codes of “90XX”, should a communication terminates on abnormal status, as an error code.

4) Besides the above codes of “90XX”, the following codes are prepared for identifying an abnormal status in details.

-21XX: For error codes in Group 3 transmission phase B
-29XX: For error codes in Group 3 reception phase B
-39XX: For error codes in Group 3 reception phase C
-41XX: For error codes in Group 3 transmission phase D
-49XX: For error codes in Group 3 reception phase D
-90XX: Common error codes
-AEXX: ISDN Common error codes
-BBXX: ISDN Dch layer 2
-BAXX: ISDN Dch layer 3
-BCXX: ISDN Bch layer 2
-B2XX: ISDN Bch layer 3
-B7XX: ISDN Bch layer 4
-B9XX: ISDN Bch layer 5
-B8XX: ISDN Bch layer 6

6.16.1 G3 Service Code List

Table 6.3 (1/3) Service Codes List

Code	Description
0000	Successful end of communication.
1080	STOP key has been pressed while calling a remote fax.
10A2	Busy tone detected.
14C0	Dial tone not detected.
14C1	Line current not detected.
14C2	Calling-and-waiting for line connection time out.
14C3	Dialling limit time out.
14D0	DTMF tone “D” is received from the Fax2Net Server.
14D1	Wait time out upon DTMF tone “A” is not received from the Fax2Net Server.
14D2	Wait time out upon DTMF tone “B” or “D” is not received from the Fax2Net Server.
21A0	Received signal other than DIS/DTC.
21A1	Contents of received DIS/DTC are faulty.
21A3	Each time there is no response from the receiver for sending TCF three times.
21A4	TCF fall back is not possible.
21A5	Received signal other than the desired signal in response to sending TCF.
21B0	Transmitter tried to transmit by confidential transmission function but the remote fax has not the capability of confidential reception.
21B1	Transmitter tried to transmit by Broadcast Initiate function but the remote fax has not the broadcast capability.
21C0	In Closed Network setting, TSI/CIG/CSI is either not received or, if received, it is not authorized one.
21E0	Contents of CM/JM are faulty at transmission side.
21E1	Phase 2 time out at transmission side.
21E2	Phase 3 time out at transmission side.
21E3	Training time out of phase B control channel at transmission side.
29B6	In Confidential Reception, the mail box specified by transmitter is not set up and open.
29B7	In Relay Broadcast Reception, the specified group number is erroneous.

Table 6.3 (2/3) Service Codes List

Code	Description
29C1	In closed Network setting, TSI/CSI is either not received or, if received, it is not authorized one.
29E0	Contents of CM/JM are faulty at receive side.
29E1	Phase 2 time out at receive side.
29E2	Phase 3 time out at receive side.
29E3	Training time out of phase B control channel at receive side.
29F1	In Relay Broadcast Reception, the relay password is unmatched.
39A0	The number of continuous-error lines have exceeded the specified limit.
39A1	The number of random-error lines have exceeded the specified limit.
39B0	Memory Overflow has occurred while receiving in memory.
39B1	Memory Overflow occurred during Confidential Reception.
39B2	Memory overflow occured during Relay Broadcast Reception.
39C0	DECODER hardware error. (cannot reproduce picture)
39C1	DECODER hardware error. (cannot detect end of picture)
41A0	There was no response each time in response to the three post commands.
41A6	Received signal other than the desired signal in responce to the post command.
41A9	Fall back in Phase C is not possible.
41C8	T5 time out.
41CE	Received negative signal in response to the post command.
41E0	Control chanel data. Time out in Phase D.
49CC	Received signal other than the desired signal in response to RNR.
49CD	Command not received in response to RNR.
49CF	In Relay Broadcast Reception, reception is interrupted due to defective image quality.
49E0	Data time out of
49E1	Fall back in Phase C is not possible.
60A0	Broadcast completed.
6803	DCN received in response to NSF/DIS without sending a single picture.
9080	Pressed STOP key.
9081	T1 time out.
9082	T2 time out.

Table 6.3 (3/3) Service Codes List

Code	Description
9083	T3 time out.
9084	No recording paper.
9087	Document jam.
9088	60-minute or 70-minute time out.
9089	Document length has exceeded its maximum limit.
908E	Recording paper jam.
9090	Received DCN.
909D	Telephone number to be called to the Fax2Net is the wrong number.
90B1	Picture memory hash error.
90C1	Document removed prior to transmission.
90C6	Normal or error-free lines not received for 13 seconds.
90C7	Error frame protocol received.
90D4	Hardware error in transmission system. (response of modem not detected)
90D5	ENCODER error. (Picture storage fault)
90F0	Option (2'nd tray) error.
90F1	Fan motor error.
90F2	Fuser error.
90F3	Recording paper size error.
90F4	Cover open.

6.16.2 G4 Service Code Lists

Table 6.4 (1/3) G4 Service Code Lists

Classification	Code	Description	Alarm	Result	Remarks
Dch layer 2	BB02	LSI NG	ON	NG	ISDN board error
	BB05	TEI release by network	ON	NG	
	BB06	TEI verification procedure failure	ON	NG	
Dch layer 3	BA01	Unallocated (unassigned) number	ON	NG	
	BA02	No route to specified transit network	ON	NG	
	BA03	No route to destination			Handling in the G3 fallback
	BA06	Channel unacceptable	ON	NG	
	BA07	Call awarded and being delivered in an established channel	ON	NG	
	BA10	Procedure sequence error, Line disconnected during in-band procedure			
	BA11	User busy			Handling of the redial
	BA12	No user responding			Handling in the G3 fallback
	BA13	No answer from user (user alerted)	ON	NG	
	BA15	Call rejected	ON	NG	
	BA16	Number changed	ON	NG	
	BA1A	Non-selected user clearing	ON	NG	
	BA1B	Destination out of order	ON	NG	
	BA1C	Invalid number format	ON	NG	
	BA1D	Facility rejected	ON	NG	
	BA1E	Response to STATUS-ENQUIRY	ON	NG	
	BA1F	Normal, unspecified	ON	NG	
	BA22	No circuit/channel available			Handling of the redial
	BA26	Network out of order	ON	NG	
	BA29	Temporary failure			Handling of the redial
	BA2A	Switching equipment congestion	ON	NG	
	BA2B	Access information discarded	ON	NG	
	BA2C	Requested circuit/channel not available			Handling of the redial
	BA2F	Resources unavailable, unspecified	ON	NG	
	BA31	Quality of service unavailable	ON	NG	
	BA32	Requested facility not subscribed	ON	NG	
	BA39	Bearer capability not authorized			Handling in the G3 fallback
	BA3A	Bearer capability not presently available			Handling in the G3 fallback
	BA3F	Service or option not available, unspecified			Handling in the G3 fallback
	BA41	Bearer capability not implemented			Handling in the G3 fallback
	BA42	Channel type not implemented	ON	NG	
	BA45	Requested facility not implemented	ON	NG	
	BA46	Only restricted digital information bearer capability is available			Handling in the G3 fallback
	BA4F	Service or option not implemented, unspecified			Handling in the G3 fallback
	BA51	Invalid call reference value	ON	NG	
	BA52	Identified channel does not exist	ON	NG	
	BA53	A suspended call exists, but this call identity does not	ON	NG	
	BA54	Call identity in use	ON	NG	
	BA55	No call suspended	ON	NG	
	BA56	Call having the requested call identity has been cleared	ON	NG	
	BA58	Incompatible destination			Handling in the G3 fallback
	BA5B	Invalid transit network selection	ON	NG	
	BA5F	Invalid message, unspecified	ON	NG	
	BA60	Mandatory information element is missing	ON	NG	
	BA61	Message type non-existent or not implemented	ON	NG	
	BA62	Message not compatible with call state or message type non-existent or not implemented	ON	NG	
	BA63	Information element non-existent or not implemented	ON	NG	
	BA64	Invalid information element contents	ON	NG	
	BA65	Message not compatible with call state	ON	NG	
	BA66	Recovery on timer expiry	ON	NG	
	BA6F	Protocol error, unspecified			Handling in the G3 fallback
	BA7F	Interworking, unspecified			Handling in the G3 fallback
	BB01	CONN message wait time out	ON	NG	
	BB07	Reset request by network	ON	NG	

Table 6.4 (2/3) G4 Service COde Lists

Classification	Code	Description	Alarm	Result	Remarks
Bch layer 2	BC02	N2 times time out	ON	NG	
	BC03	FRMR reception	ON	NG	
	BC04	FRMR transmission	ON	NG	
	BC05	The other party link disconnection	ON	NG	
	BC08	T3 time out	ON	NG	
	BD01	SABME wait time out	ON	NG	
Bch layer 3	B201	The other party terminal busy	ON	NG	
	B203	Incorrect facility request	ON	NG	
	B205	Network congestion	ON	NG	
	B209	Connection impossible (failure or absent)	ON	NG	
	B210	Packet that is not adaptable to status transition (Packet level ready state)	ON	NG	
	B211	Remote procedure error	ON	NG	
	B212	Packet that is not adaptable to status transition (DTE restart request state)	ON	NG	
	B213	Local procedure error	ON	NG	
	B214	Packet that is not adaptable to status transition (Empty state)	ON	NG	
	B215	Packet that is not adaptable to status transition (CO packet wait)	ON	NG	
	B216	Packet that is not adaptable to status transition (CA packet wait)	ON	NG	
	B217	Packet that is not adaptable to status transition (During data transmission)	ON	NG	
	B218	Packet that is not adaptable to status transition (Outgoing/incoming collision)	ON	NG	
	B219	Packet that is not adaptable to status transition (CQ packet)	ON	NG	
	B221	Unallowable packet (Packet type not clear)	ON	NG	
	B222	Unallowable packet (Call by special incoming logic channel)	ON	NG	
	B226	Unallowable packet (Too short packet)	ON	NG	
	B227	Unallowable packet (Too long packet)	ON	NG	
	B229	Unallowable packet (Restart packet in which LCN or LCGN is not 0)	ON	NG	
	B22A	Unallowable packet (Packet that is not adaptable to the facility)	ON	NG	
	B231	Timer time out (CA packet wait time out)	ON	NG	
	B232	Timer time out (CF packet wait time out)	ON	NG	
	B233	Timer lapsed (RR/RNR packet wait time out)	ON	NG	
	B241	Call setting problem (unallowable facility code)	ON	NG	
	B242	Call setting problem (unallowable facility parameter)	ON	NG	
	B243	Call setting problem (incoming address is invalid)	ON	NG	
	B244	Call setting problem (outgoing address is invalid)	ON	NG	
	B245	Call setting problem (invalid facility length)	ON	NG	
	B246	Call setting problem (call termination reject)	ON	NG	
	B247	Call setting problem (No empty logic channel)	ON	NG	
	B248	Call setting problem (outgoing/incoming collision)	ON	NG	
	B249	Call setting problem (overlapped facility request)	ON	NG	
	B24A	Call setting problem (address length other than zero)	ON	NG	
	B24B	Call setting problem (facility length other than zero)	ON	NG	
Bch layer 4	B702	Reception TDT length over	ON	NG	
	B703	TDT length negotiation unsuccessful	ON	NG	
	B704	Invalid block received	ON	NG	
	B705	Abnormal parameter received	ON	NG	
	B706	Illegal block received	ON	NG	
	B707	TCR wait time out (T0.2 T.O)	ON	NG	
	B708	TCA wait time out (T1.1 T.O)	ON	NG	
	B709	Communication interruption due to TCC reception	ON	NG	
	B70A	Communication interruption due to TBR reception	ON	NG	

Table 6.4 (3/3) G4 Service COde Lists

Classification	Code	Description	Alarm	Result	Remarks
Bch layer 5	B901	Command response reception error	ON	NG	
	B902	Non-implicit command response received	ON	NG	
	B903	Lack of essential parameter	ON	NG	
	B904	Invalid parameter reception	ON	NG	
	B905	Invalid parameter value reception	ON	NG	
	B906	Window size over reception	ON	NG	
	B907	Document reference number error	ON	NG	
	B908	Length illegal	ON	NG	
	B909	Check point error	ON	NG	
	B90A	Unallowable document	ON	NG	
Bch layer 6	B801	Command response reception error	ON	NG	
	B802	Parameter reception error	ON	NG	
	B803	Negotiation unsuccessful RSSP reception	ON	NG	
	B804	Negotiation unsuccessful RSSN reception	ON	NG	
	B805	CSCC at the time when the transmission right cannot be reversed	ON	NG	
	B806	CSA reception	ON	NG	
	B809	Error recovery time out	ON	NG	
	B80A	Time out at the time of termination	ON	NG	
	B80B	Close wait time out	ON	NG	
	B80C	CSE reception before close	ON	NG	
Bch layer 7	AE01	Negotiation unsuccessful (requirement for communication with the other party FAX is not met)	ON	NG	
	AE02	Negotiation unsuccessful (only the other party standard)	ON	NG	
	AE03	The other party SUD fault	ON	NG	
	AE04	Basic terminal function unmatched	ON	NG	
	AE05	Switching type unmatched	ON	NG	
	AE06	The other party TU fault	ON	NG	

If "redial" is applicable, the redial operation is entered depending on the number of redial times. If the redial operation cannot be entered (i.e. the number of redial times is 0 or the residual number of redial times is 0), Alarm=ON and Result=BUSY occur as with PSTN.

If "G3 fallback" is applicable, the dial operation in G3 mode is entered.
If a service code to which "G3 fallback" is applicable occurs regardless of dialing in G3 mode, a communication error is assumed and Alarm=ON and Result=NG occur.

OKIFAX 1050/2350/2450/4100/4500/4550/5200/5300/5400/5500/5600/5650/5700/5900/5750/5950/OKIOFFICE44/84/87 Extension cable lists

No.	Oki Parts Number	Description	Remarks	OKIFAX 1050	OKIFAX 2350/2450	OKIFAX 5200/5300/5400 5500/5600	OKIOFFICE44 OKIFAX 4100	OKIOFFICE84 OKIFAX 4500/4550	OKIFAX 5700/5900 5750/5950	OKIOFFICE87	OKIFAX 5650
1	4YS4111-5655P001	Extension cable (OPE)		○	○	•••	•••	•••	•••	•••	•••
2	4YS4111-5656P001	Extension cable (Sensor)		○	○	○	○	○	○	○	○
3	4YS4111-5657P001	Extension cable (PC1, 2)		○	○	○	○	○	○	○	○
4	4YS4111-5658P001	Extension cable (Speaker)		○	○	○	○	○	○	○	○
5	4YS4111-5659P001	Extension cable (PWU)		○	○	○	•••	•••	○	•••	○
6	4YS4111-5660P001	Extension cable (FAN)		○	○	○	•••	•••	○	•••	○
7	4YS4111-5661P001	Extension cable (S-motor)		○	•••	•••	○	•••	•••	•••	•••
8	4YS4111-5662P001	Extension cable (D-motor)		○	•••	•••	•••	•••	•••	•••	•••
9	4YS4111-5663P001	Extension cable (R-motor)		○	•••	•••	•••	•••	•••	•••	•••
10	4YS4111-5664P001	Extension cable (S-motor)		•••	○	○	○	○×2	•••	○×2	○
11	4YS4111-5665P001	Extension cable (D-motor)		•••	○	○	•••	•••	•••	•••	○
12	4YS4111-5666P001	Extension cable (R-motor)		•••	○	○	•••	•••	•••	•••	○
13	4YS4111-5667P001	Extension cable (2nd)		○	○	○	•••	•••	○	•••	○
14	238A1071P0006	SUMI card (LED head)		•••	○	○	○	○	•••	•••	○
15	40331401YS	Connection code; extension (OPE)	OPE/MCNT	•••	•••	○	○	○	○	○	○
16	40331501YS	Connection code; extension (MPSU)	MCNT/MPSU (Power)	•••	•••	•••	○	○	•••	○	•••
17	40331602YS	Connection code; extension (Heater)	HEATER AC/PSU	•••	•••	•••	○	○	•••	○	•••
18	40331801YS	Connection code; extension (Clutch)	CLUTCH/MCNT	•••	•••	•••	○	○	•••	○	•••
19	40332001YS	Connection code; extension	FUJI CARD: MCNT/HVPS	•••	•••	•••	○	○	•••	○	•••
20	40332201YS	Connection code; extension (SPSU)	SPSU (Sub-power)/MCNT	•••	•••	○	•••	•••	•••	•••	•••
21	40332301YS	Connection code; extension (PSU)	PSU (Power)/SPSU (Sub-power)	•••	•••	○	•••	•••	•••	•••	•••
22	40331901YS	Connection code; extension (Transformer)	Transformer/SPSU (Sub-power)	•••	•••	○	•••	•••	•••	•••	•••
23	40780201YS	Connection Flat (P6L)	MCNT/P6L	•••	•••	•••	•••	○	•••	○	•••
24	4YS4111-5665P001	Extension cable (D-motor)	Applicable to S-motor	•••	•••	•••	•••	•••	○	•••	•••
25	4YS4111-2491G001	Extension cable (D/R-motor)	Applicable to D/R-motor	•••	•••	•••	•••	•••	○	•••	•••
26	238A1071P0006	SUMI card (LED1)		•••	•••	•••	•••	•••	○	○	•••
27	238A1071P0007	SUMI card (LED2)		•••	•••	•••	•••	•••	○	○	•••
28		Extension cable (3.3V)	PSU (3.3V)	•••	•••	•••	•••	•••	○	•••	•••

This chapter contains:

(a) Troubleshooting flow charts related to general operations
(b) Troubleshooting flow charts by test operations
(c) Troubleshooting flow charts placing an emphasis on mechanical portions

Section No.	Name of Flow Chart	(a)	(b)	(c)	Page
7.1	Overall troubleshooting flow chart	◯	◯		222
7.2	No LCD operation	◯			223
7.3	ALARM LED on	◯			224
7.4	Printing test failure	◯	◯		225
7.5	No local copy	◯	◯		226
7.6	Auto dial failure	◯			227
7.7	Transmission problem	◯			228
7.8	Auto reception failure	◯			229
7.9	Reception problem	◯			230
7.10	Sensor calibration test		◯		231
7.11	LED test		◯		232
7.12	Tone send test		◯		233
7.13	High-speed modem test		◯		234
7.14	MF (Tone) send test		◯		236
7.15	Tone (TEL/FAX) send test		◯		237
7.16	No acoustic line monitor	◯			238
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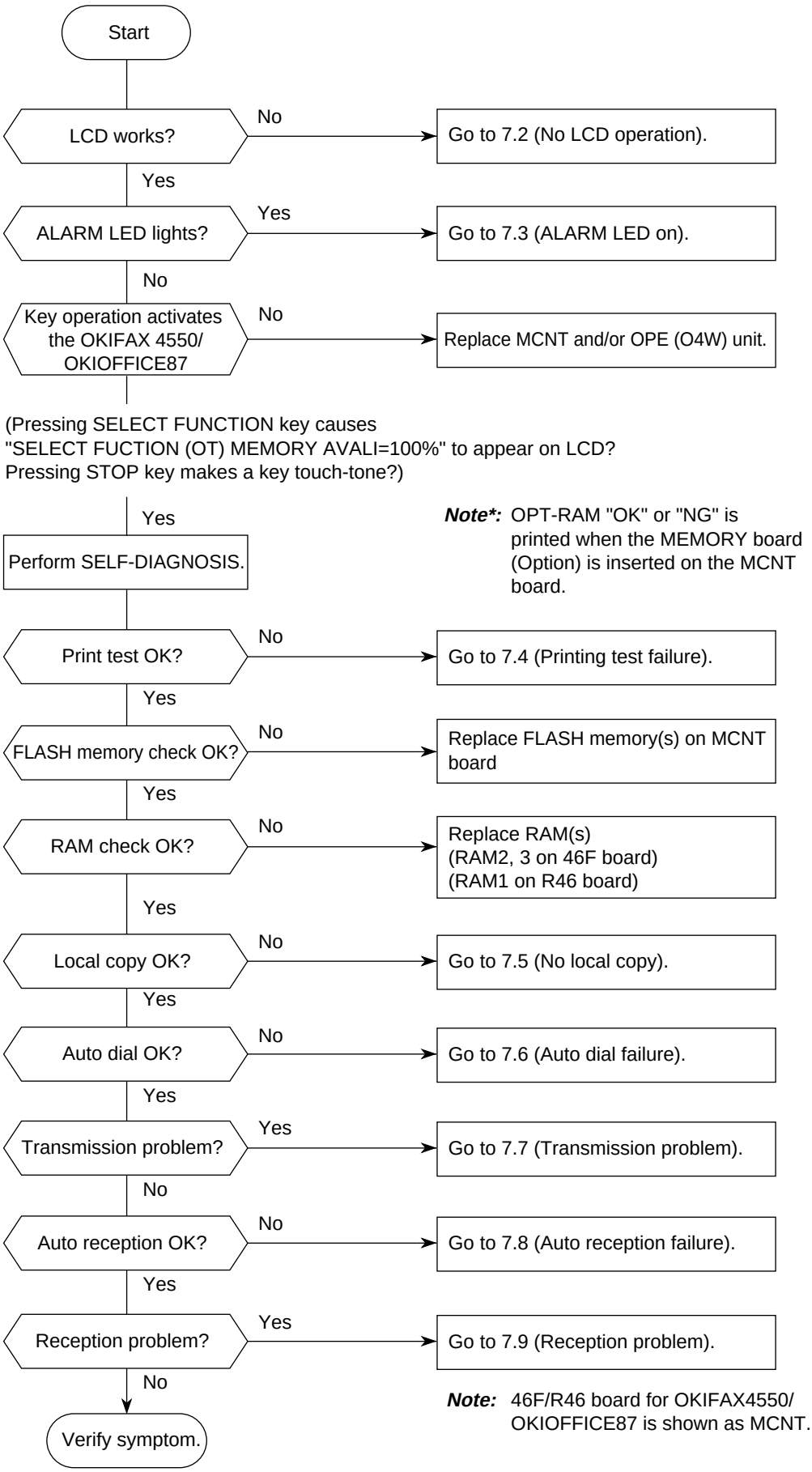
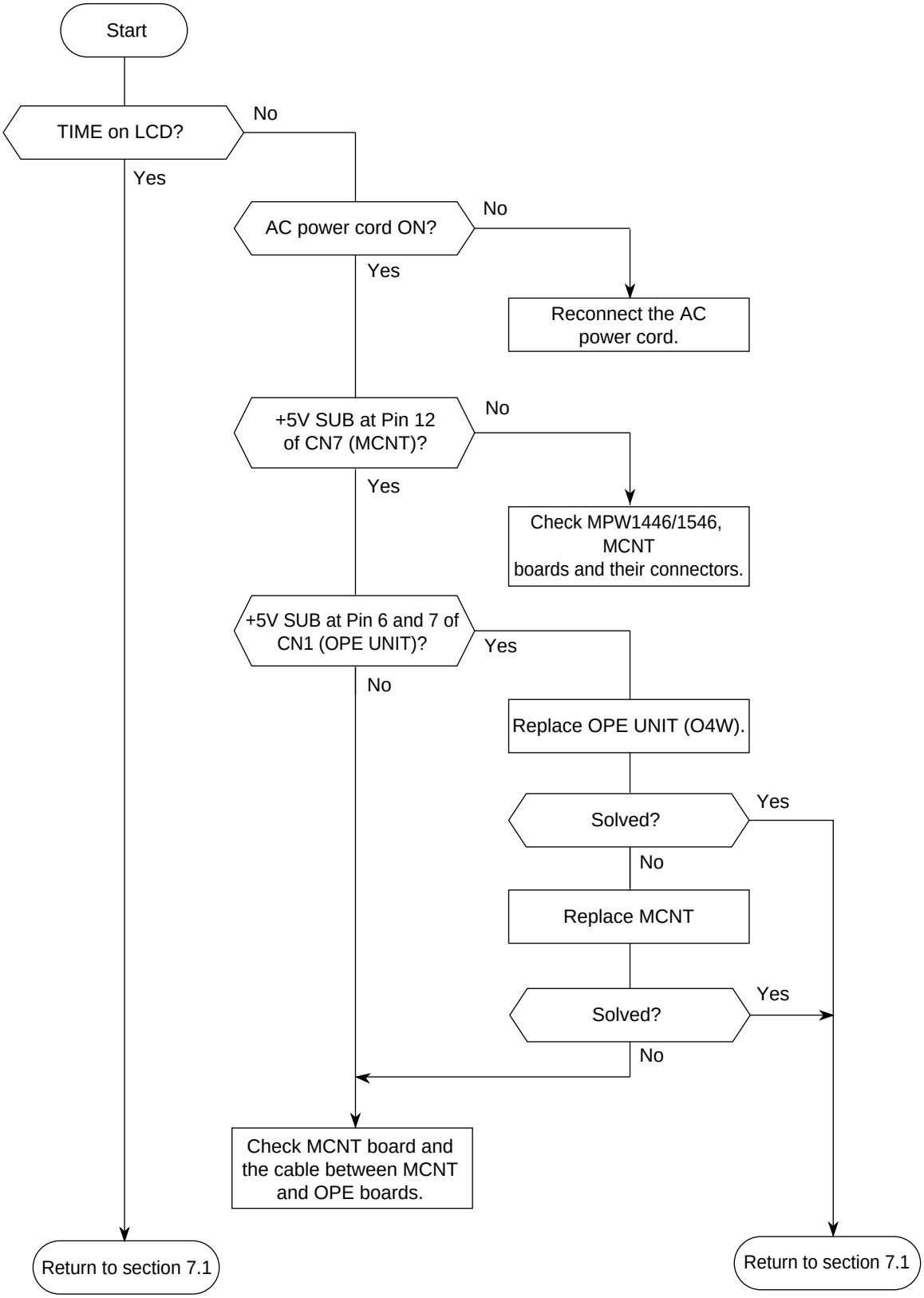
7.18	No document feeding			◯	239
7.19	Multiple document feeding			◯	240
7.20	Document skew			◯	241
7.21	Document jam			◯	243
7.22	Printer unit				244

7.1 Overall Troubleshooting Flow Chart

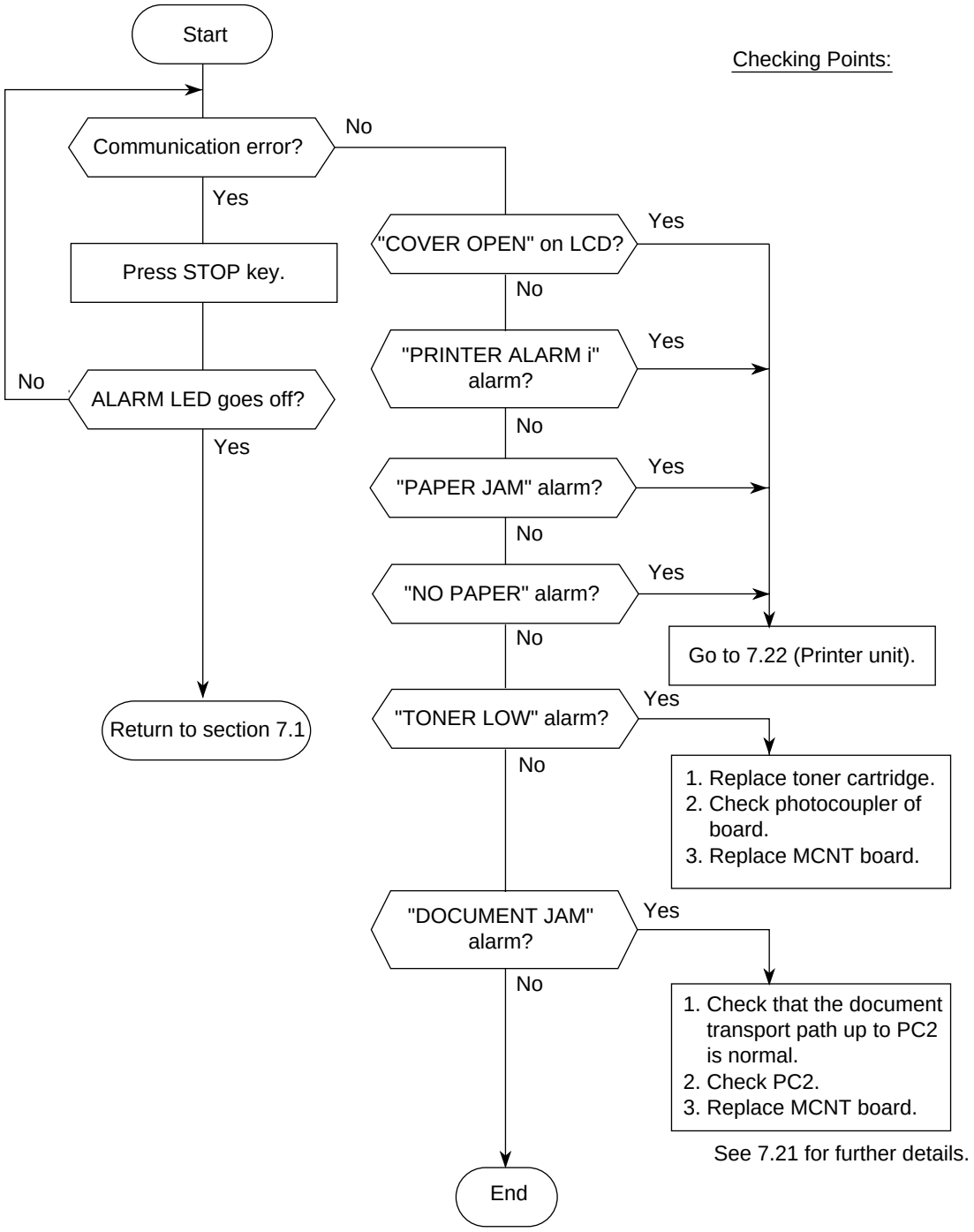


7.2 No LCD Operation



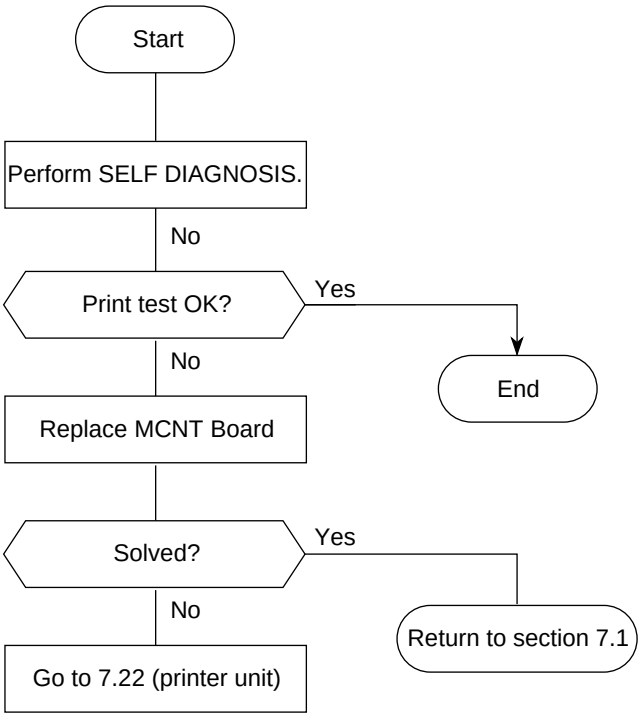
Note: 46F/R46 board for OKIFAX4550/OKIOFFICE87 is shown as MCNT.

7.3 Alarm LED On

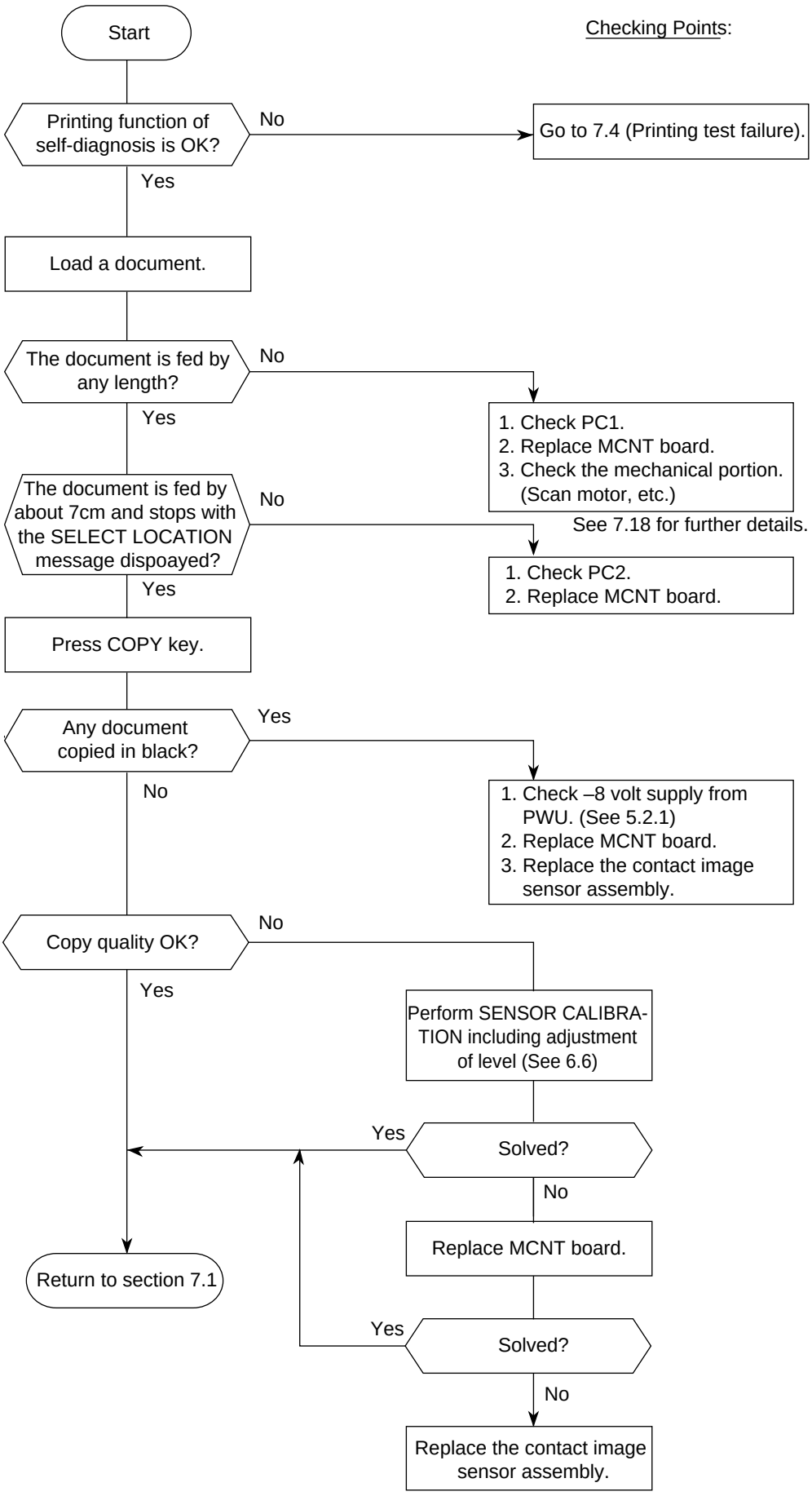


Note* : "PRINTER ALARM i" will be shown as follows:
PRINTER ALARM 2 and PRINTER ALARM 4.

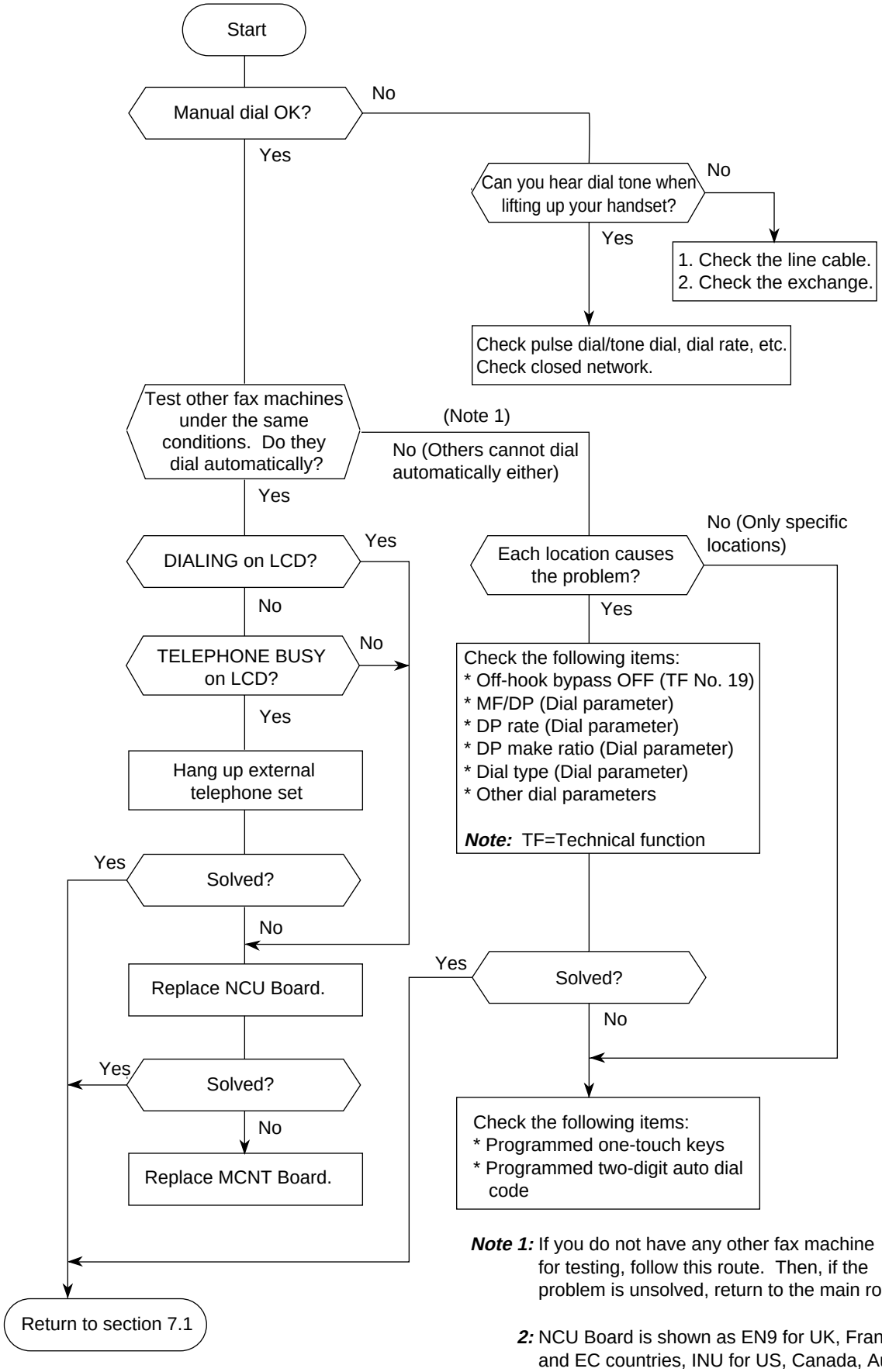
7.4 Printing Test Failure



7.5 No Local Copy



7.6 Auto Dial Failure

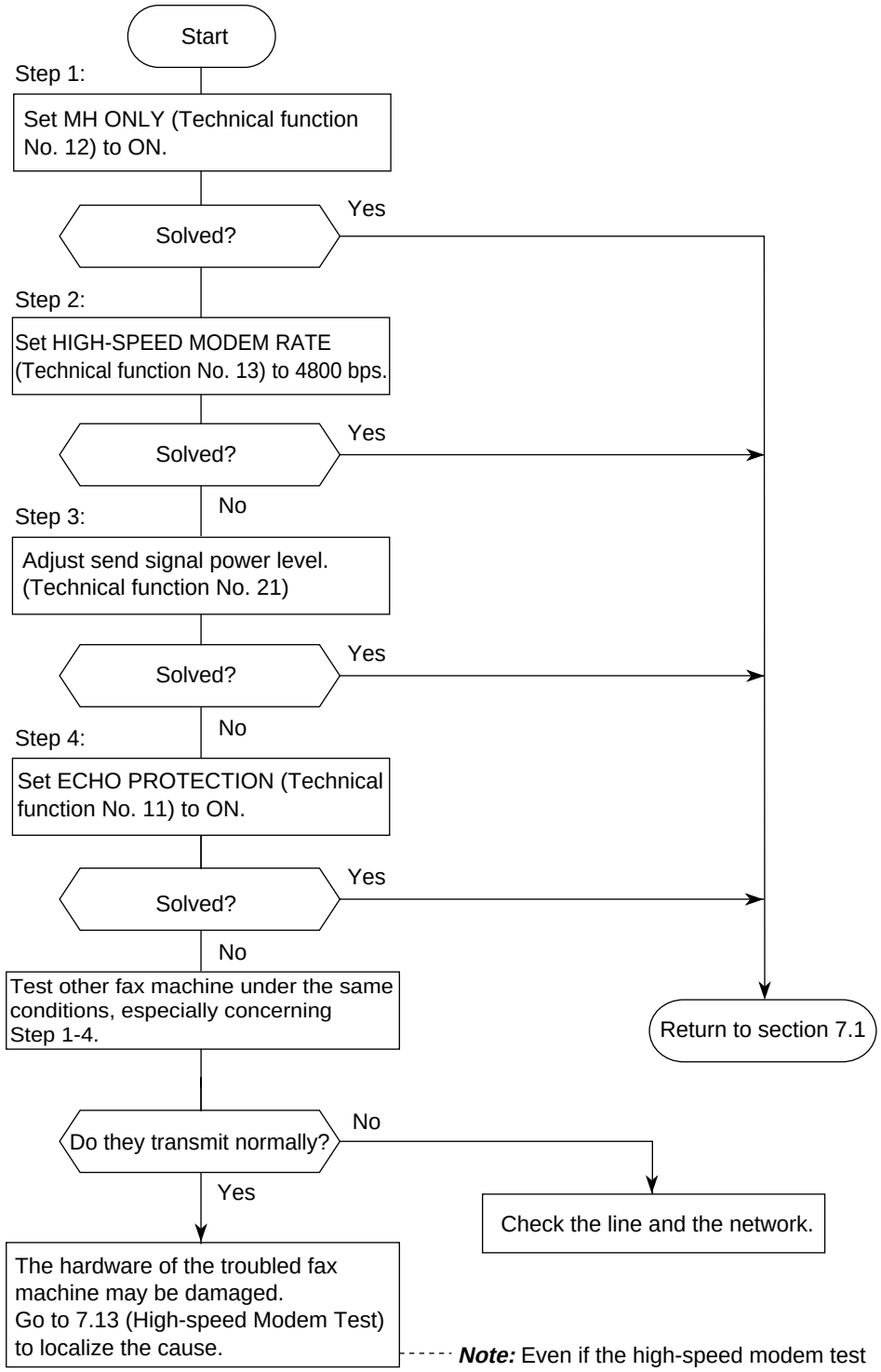


Note 1: If you do not have any other fax machine for testing, follow this route. Then, if the problem is unsolved, return to the main route.

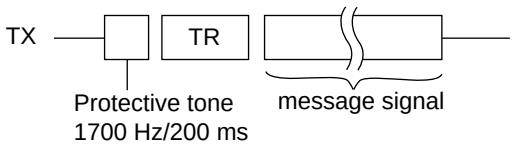
2: NCU Board is shown as EN9 for UK, France and EC countries, INU for US, Canada, Australlia, New Zealand, Singapore, China, Malaysia and non-EC countries (Poland etc.)

7.7 Transmission Problem

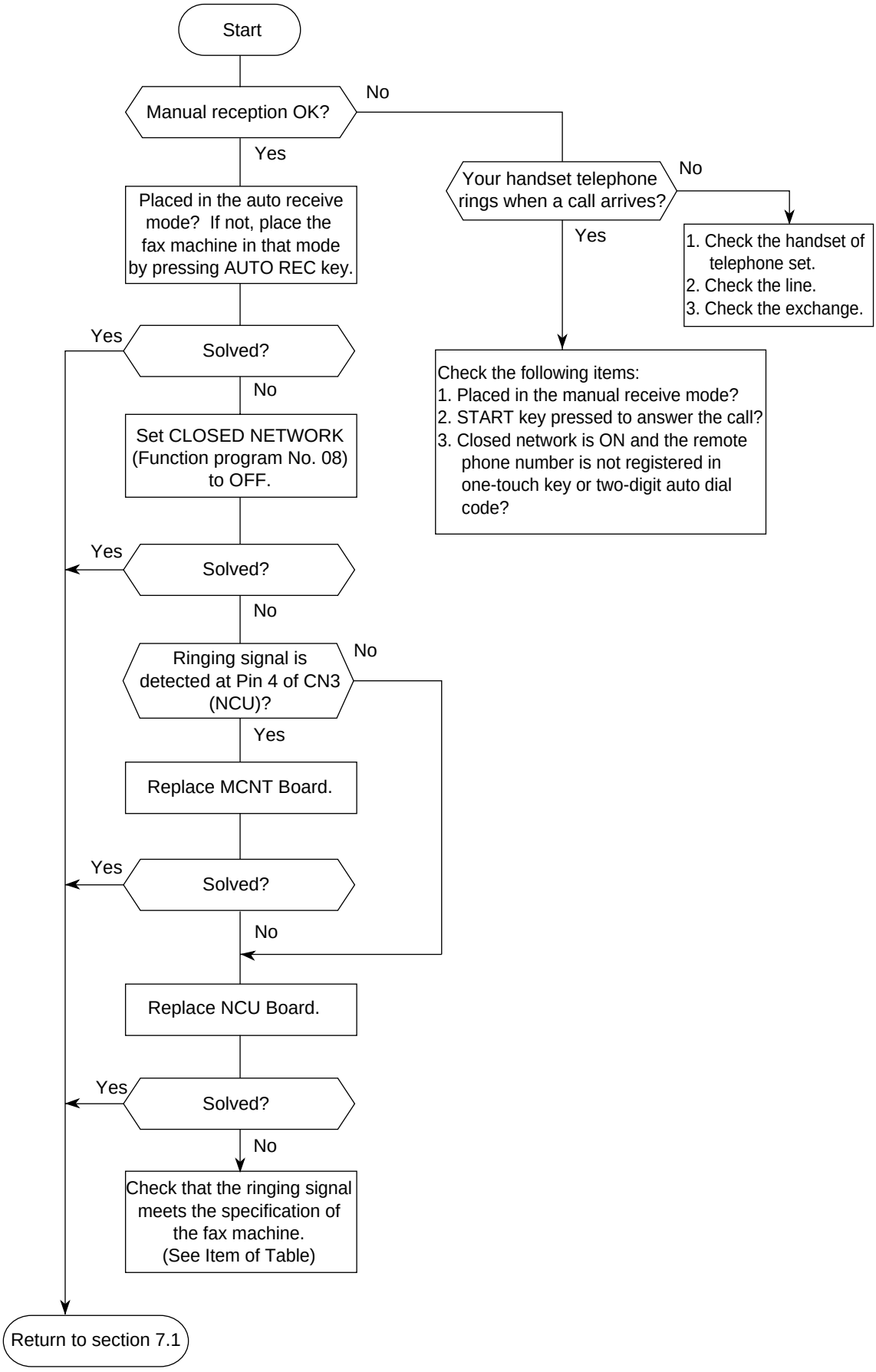
This section explains how to localize the cause of problems occurred after completion of connection with a remote station.


Start
Step 1:
Set MH ONLY (Technical function No. 12) to ON.
Solved?
Yes
Step 2:
Set HIGH-SPEED MODEM RATE (Technical function No. 13) to 4800 bps.
Solved?
Yes
No
Step 3:
Adjust send signal power level. (Technical function No. 21)
Solved?
Yes
No
Step 4:
Set ECHO PROTECTION (Technical function No. 11) to ON.
Solved?
Yes
No
Test other fax machine under the same conditions, especially concerning Step 1-4.
Return to section 7.1
Do they transmit normally?
No
Yes
Check the line and the network.
The hardware of the troubled fax machine may be damaged.
Go to 7.13 (High-speed Modem Test) to localize the cause.
Note: Even if the high-speed modem test results in success, 300 bps signal route remains unchecked. In that case, the most suspected unit is MCNT Board.

Description: Protective tone is 1700 Hz/200 ms.
This signal is added to training signal to protect the training signal against echo as follows.

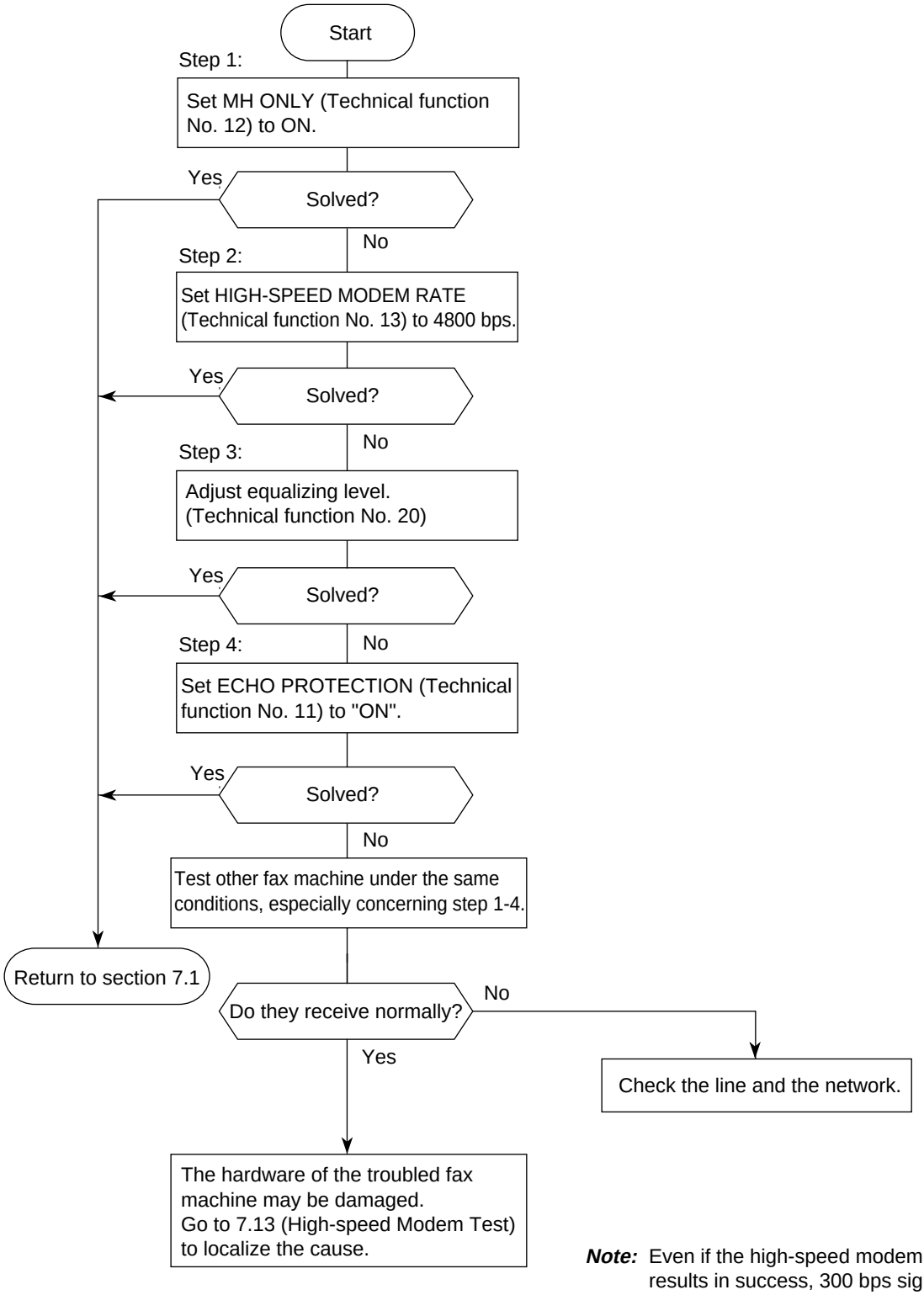


7.8 Auto Reception Failure


Start
Manual reception OK?
No
Yes
Your handset telephone rings when a call arrives?
No
Yes
1. Check the handset of telephone set.
2. Check the line.
3. Check the exchange.
Placed in the auto receive mode? If not, place the fax machine in that mode by pressing AUTO REC key.
Yes
Solved?
No
Check the following items:
1. Placed in the manual receive mode?
2. START key pressed to answer the call?
3. Closed network is ON and the remote phone number is not registered in one-touch key or two-digit auto dial code?
Set CLOSED NETWORK (Function program No. 08) to OFF.
Yes
Solved?
No
Ringing signal is detected at Pin 4 of CN3 (NCU)?
No
Yes
Replace MCNT Board.
Yes
Solved?
No
Replace NCU Board.
Yes
Solved?
No
Check that the ringing signal meets the specification of the fax machine. (See Item of Table)
Return to section 7.1

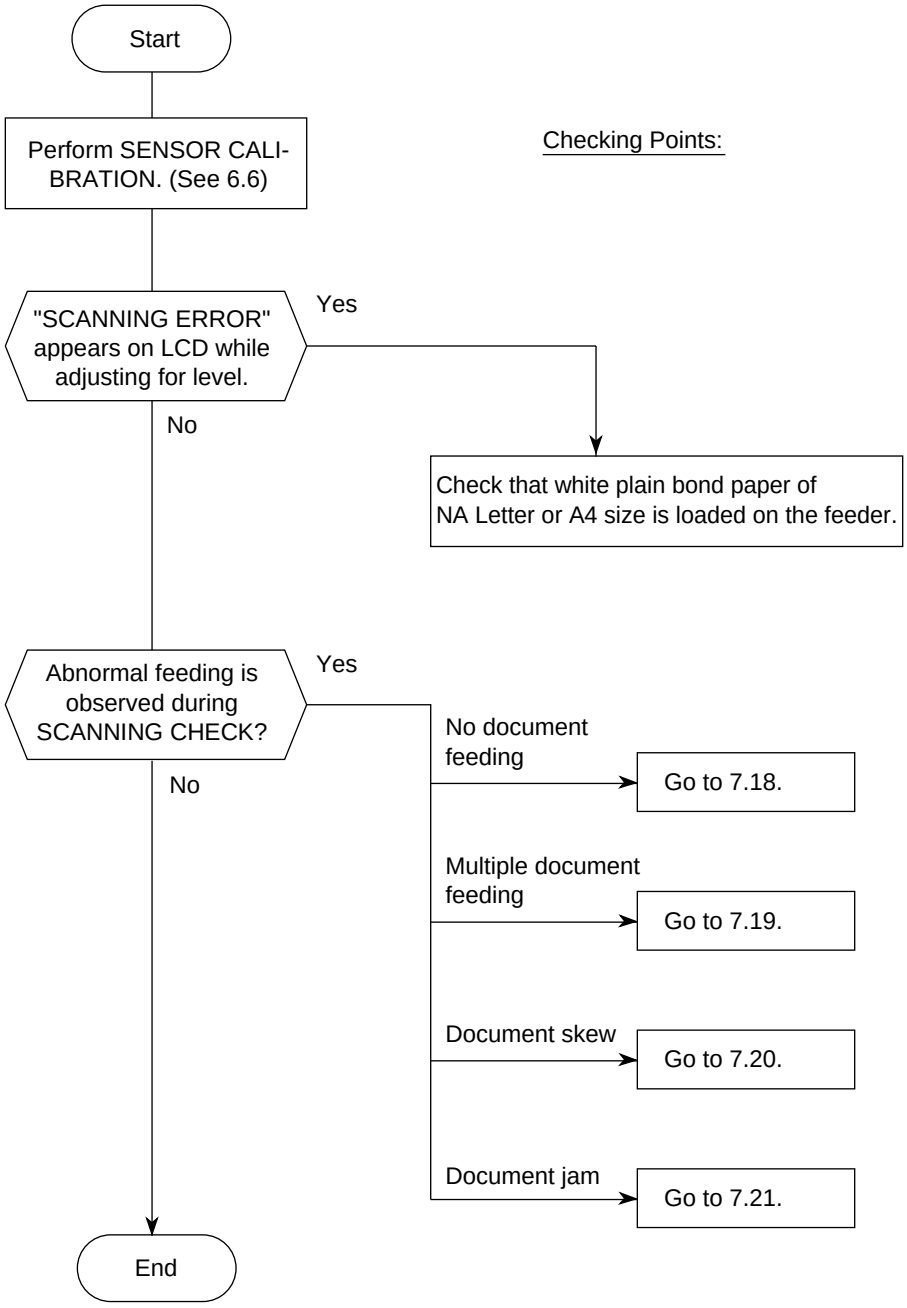
7.9 Reception Problem

This section explains how to localize the cause of problems occurred after completion of connection with a remote station.

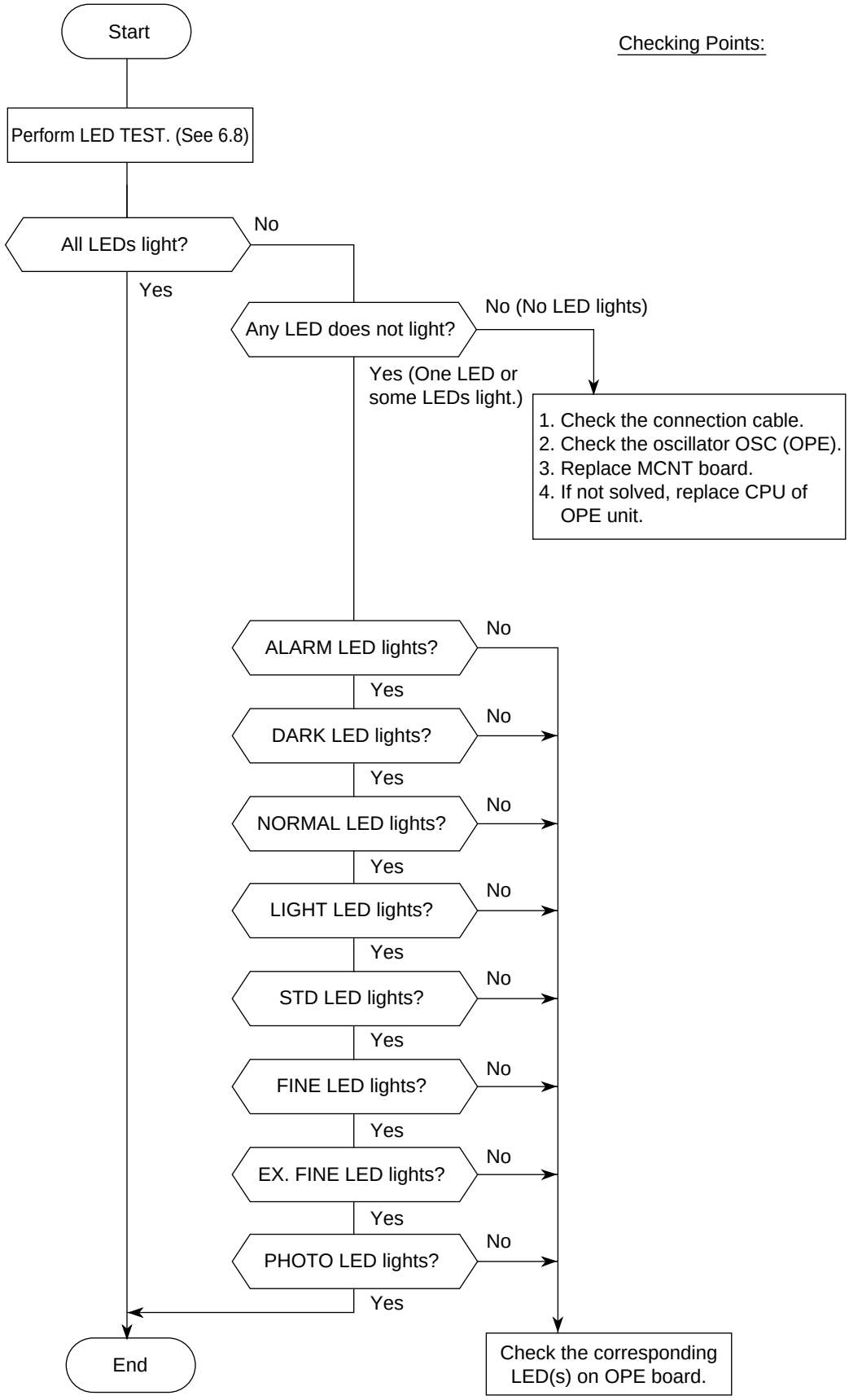


Note: Even if the high-speed modem test results in success, 300 bps signal route remains unchecked. In that case, the most suspected unit is MCNT board.

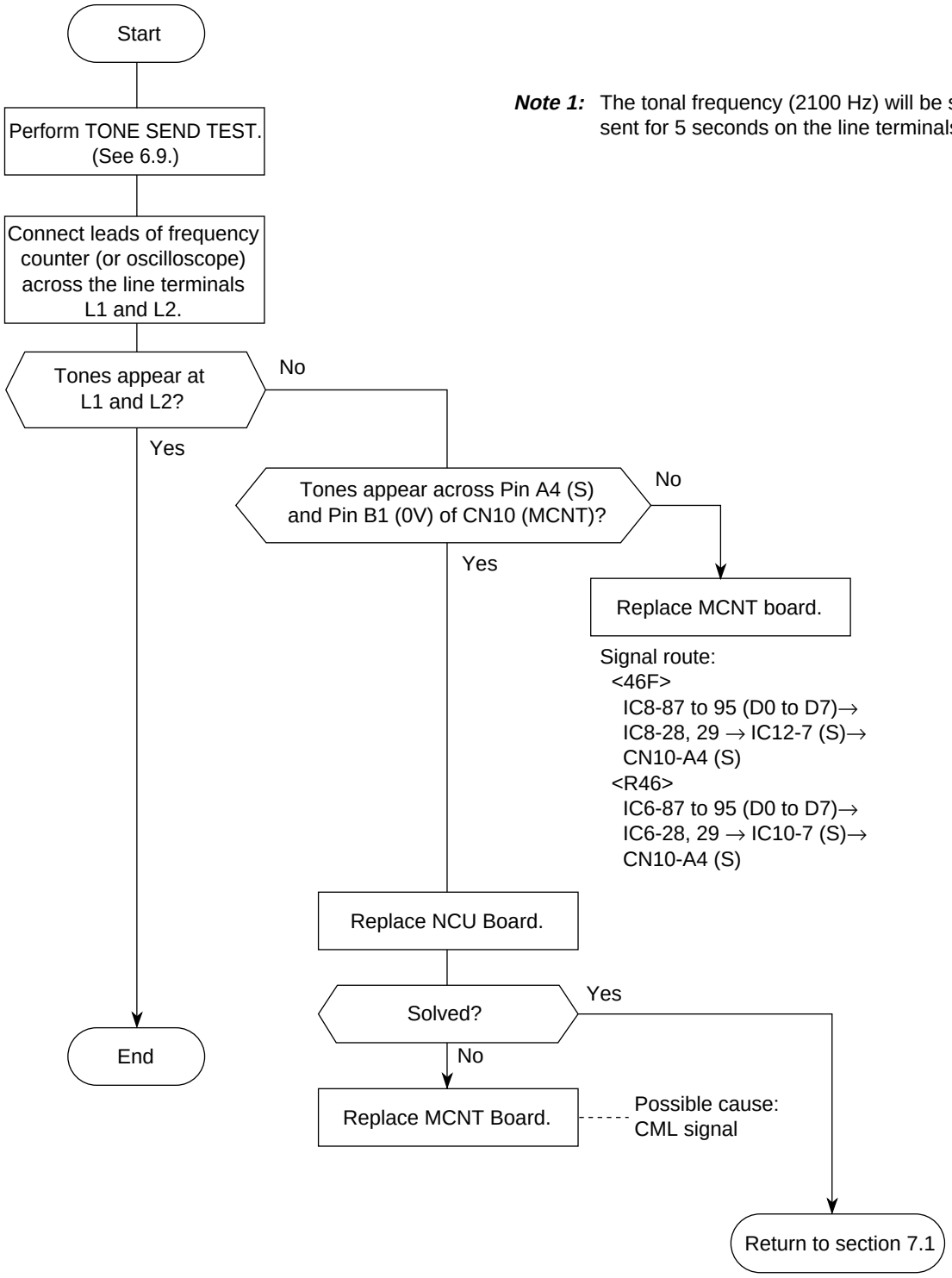
7.10 Sensor Calibration Test



7.11 LED Test

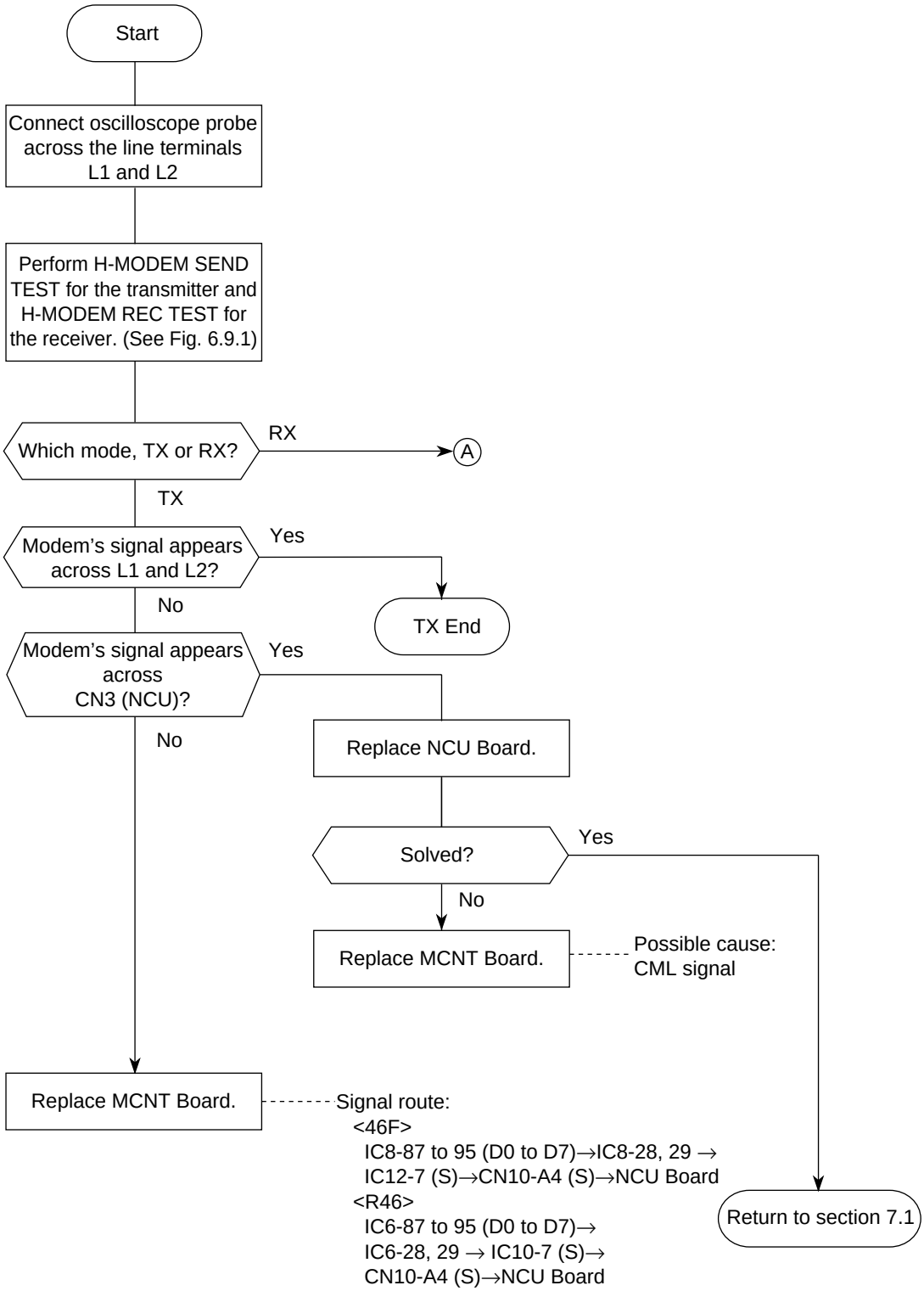

Start
Perform LED TEST. (See 6.8)
All LEDs light?
No
Yes
Any LED does not light?
No (No LED lights)
Yes (One LED or some LEDs light.)
Checking Points:
1. Check the connection cable.
2. Check the oscillator OSC (OPE).
3. Replace MCNT board.
4. If not solved, replace CPU of OPE unit.
ALARM LED lights?
DARK LED lights?
NORMAL LED lights?
LIGHT LED lights?
STD LED lights?
FINE LED lights?
EX. FINE LED lights?
PHOTO LED lights?
End
Check the corresponding LED(s) on OPE board.

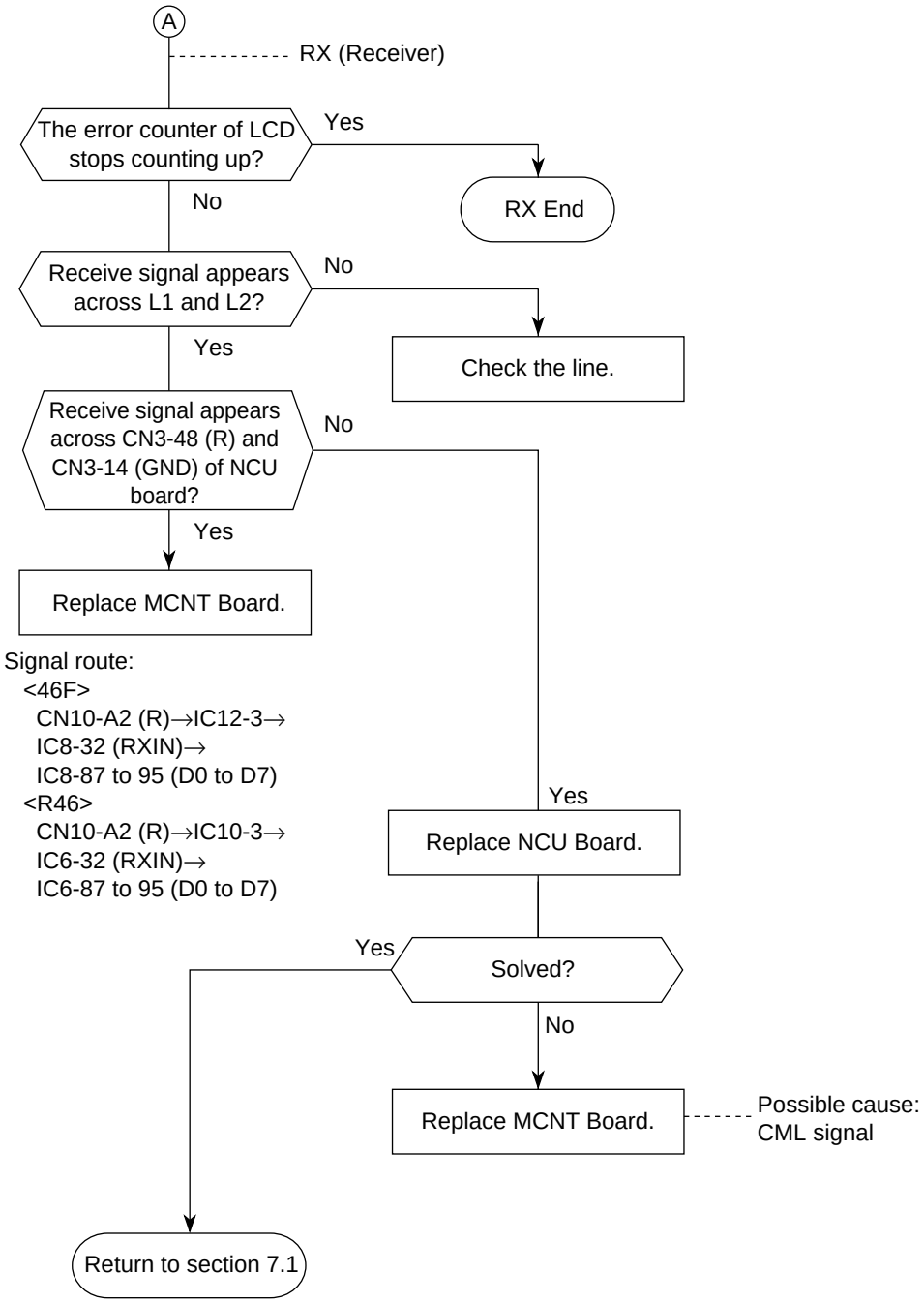
7.12 Tone Send Test



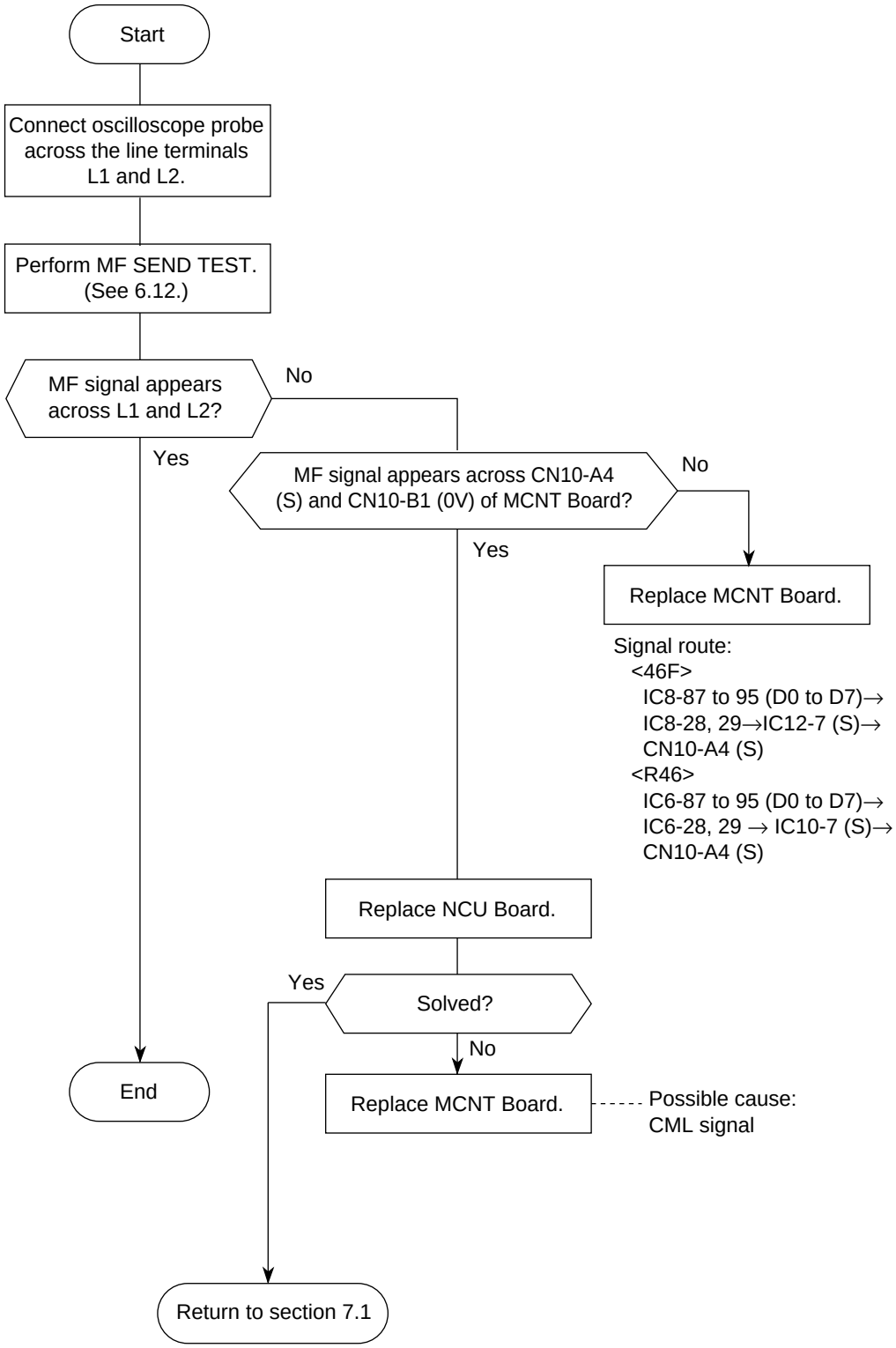
Note 1: The tonal frequency (2100 Hz) will be sequentially sent for 5 seconds on the line terminals L1 and L2.

7.13 High-speed Modem Test

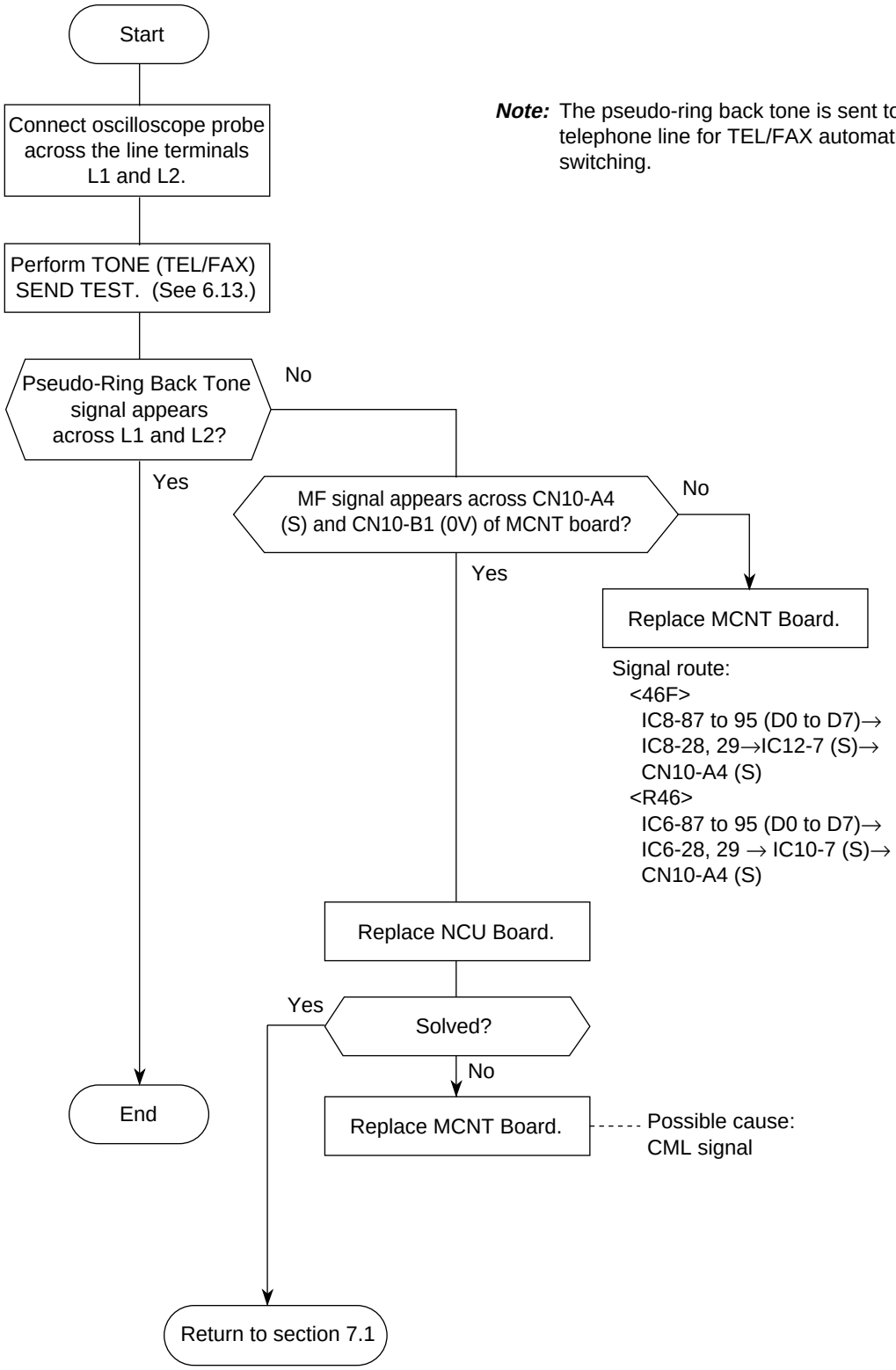



A
RX (Receiver)
The error counter of LCD stops counting up?
Yes
RX End
No
Receive signal appears across L1 and L2?
No
Check the line.
Yes
Receive signal appears across CN3-48 (R) and CN3-14 (GND) of NCU board?
No
Yes
Replace MCNT Board.
Signal route:
<46F>
CN10-A2 (R)→IC12-3→
IC8-32 (RXIN)→
IC8-87 to 95 (D0 to D7)
<R46>
CN10-A2 (R)→IC10-3→
IC6-32 (RXIN)→
IC6-87 to 95 (D0 to D7)
Yes
Replace NCU Board.
Yes
Solved?
No
Replace MCNT Board.
Possible cause:
CML signal
Return to section 7.1

7.14 MF Send Test



7.15 Tone (TEL/FAX) Send Test

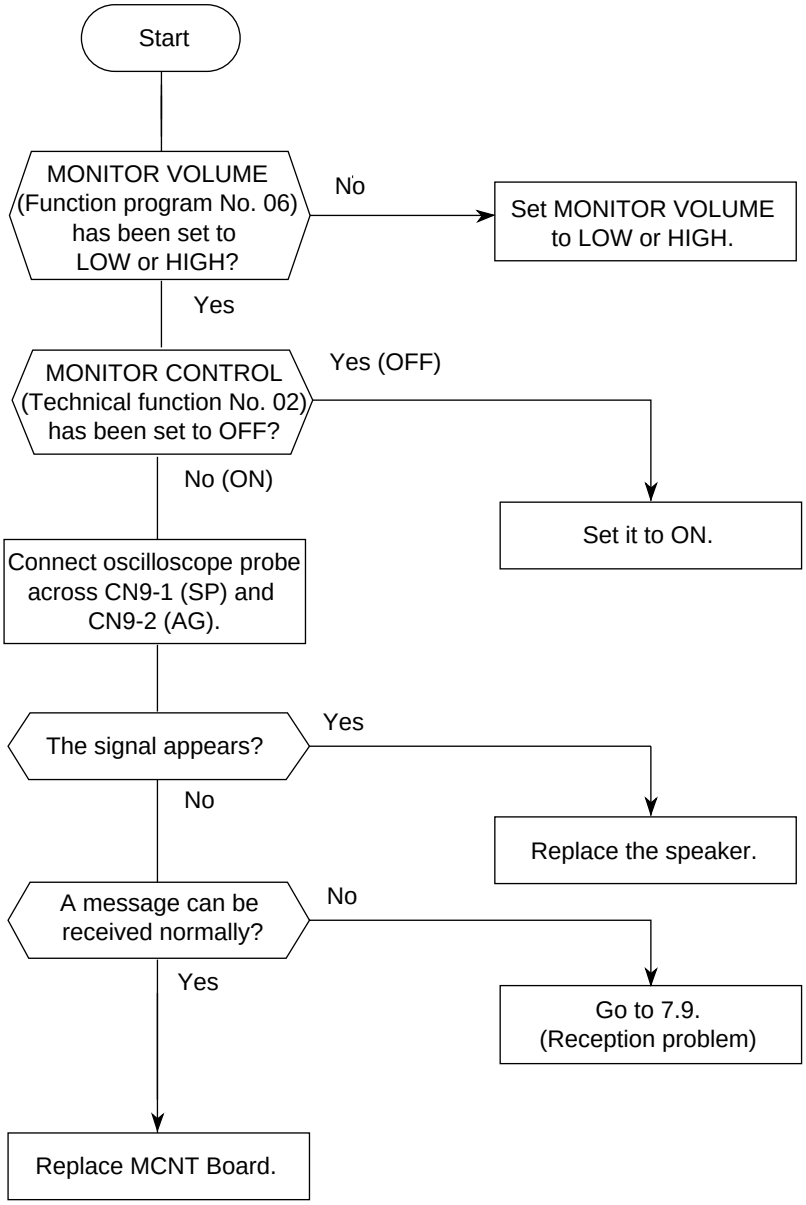


Note: The pseudo-ring back tone is sent to the telephone line for TEL/FAX automatic switching.

7.16 No Acoustic Line Monitor

There are two source routes of acoustic line monitor:

(a) General communication signal
(b) DP pulse signal



Signal route:

<46F>
CN10-A2→IC12-1 (RM)→
TR501→IC11-12~15→
IC11-3→IC5-5

<R46>
CN10-A2→IC10-1 (RM)→
TR1→IC8-12~15→
IC8-3→IC11-5

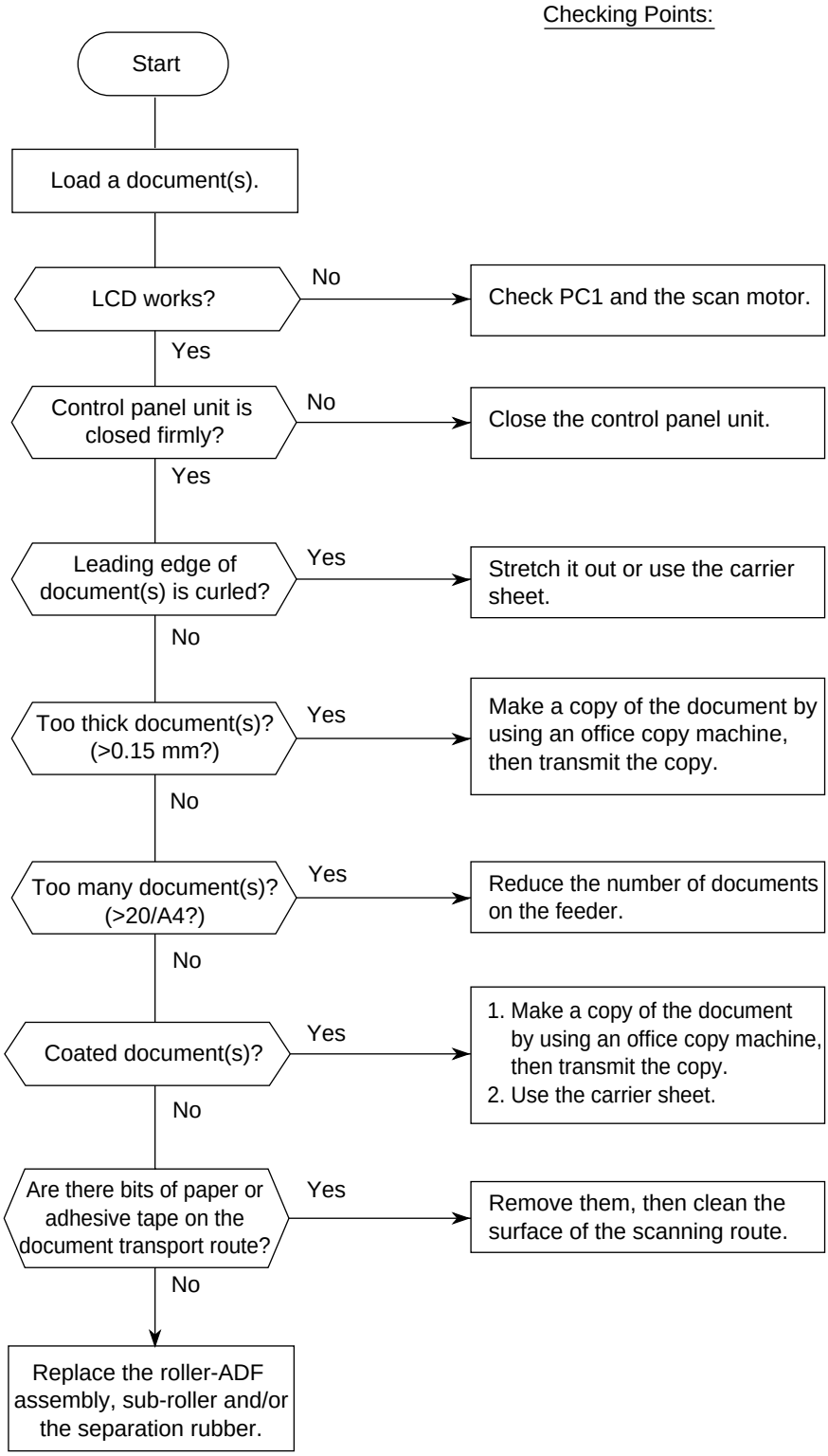
7.17 Power Supply Unit

(A) Low-voltage Selection
Replace the Power Supply Unit when output voltage written on the item A3 in the Appendix A is not normal.

(B) High-voltage Selection
T.B.D. (To be determined)

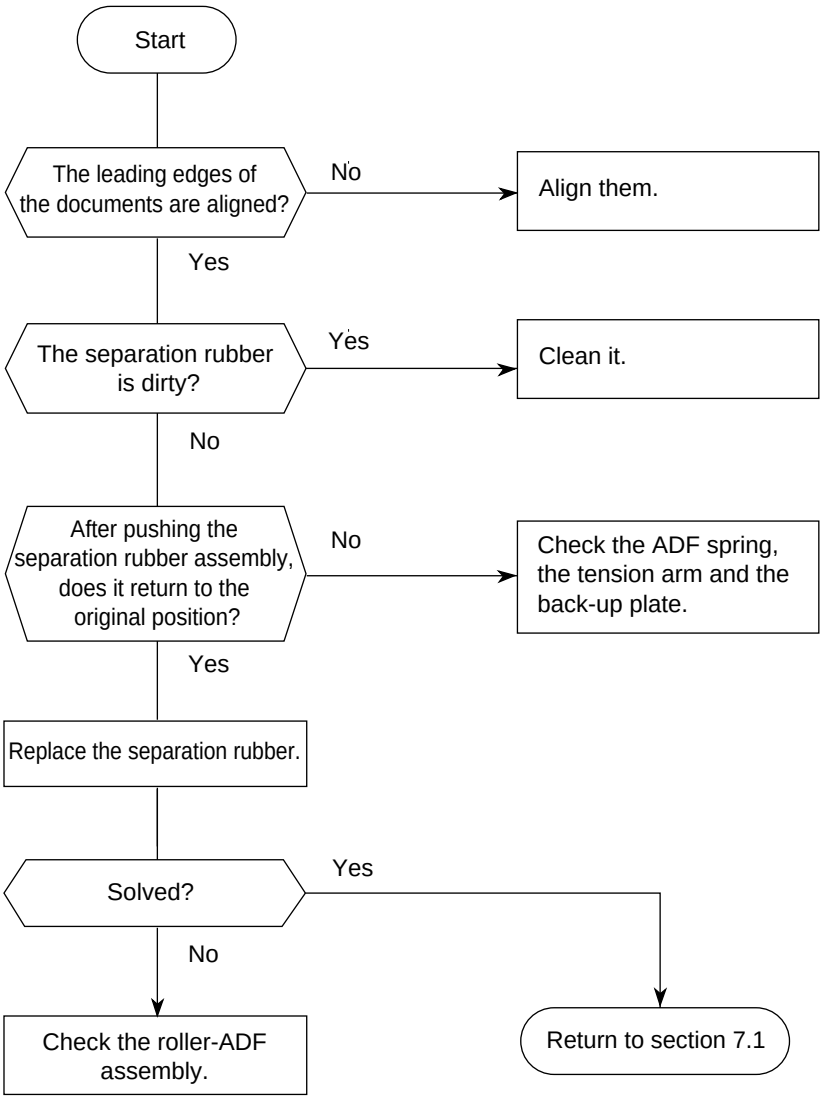
7.18 No Document Feeding

Note: This section places an emphasis on troubleshooting of mechanical portions. Therefore, it is recommended to replace the MCNT Board first and, then if not solved, follow this flow chart.

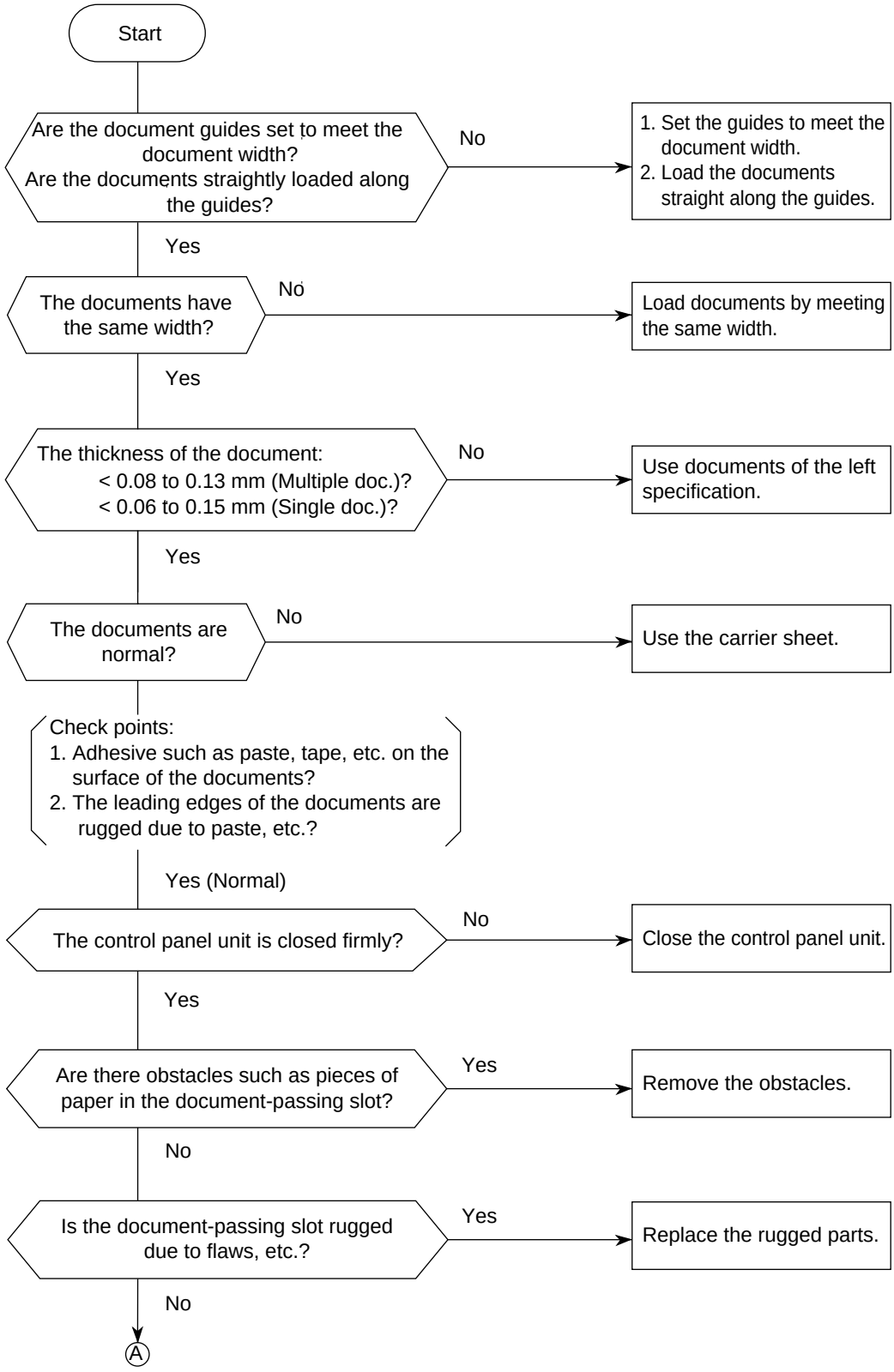

Checking Points:
Start
Load a document(s).
LCD works?
No
Check PC1 and the scan motor.
Yes
Control panel unit is closed firmly?
No
Close the control panel unit.
Yes
Leading edge of document(s) is curled?
Yes
Stretch it out or use the carrier sheet.
No
Too thick document(s)? (>0.15 mm?)
Yes
Make a copy of the document by using an office copy machine, then transmit the copy.
No
Too many document(s)? (>20/A4?)
Yes
Reduce the number of documents on the feeder.
No
Coated document(s)?
Yes
1. Make a copy of the document by using an office copy machine, then transmit the copy.
2. Use the carrier sheet.
No
Are there bits of paper or adhesive tape on the document transport route?
Yes
Remove them, then clean the surface of the scanning route.
No
Replace the roller-ADF assembly, sub-roller and/or the separation rubber.

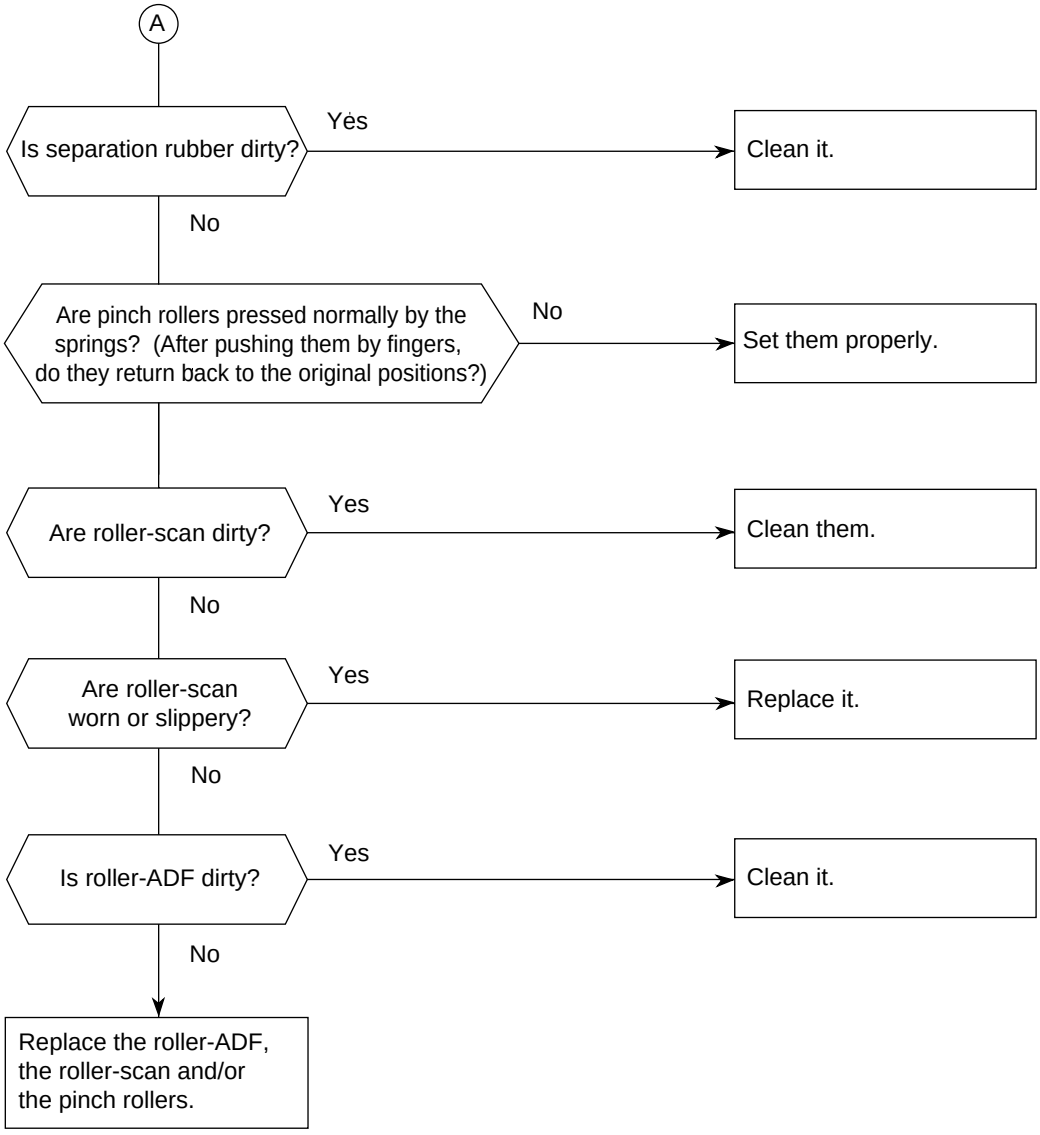
7.19 Multiple Document Feeding

Definition: Multiple document feeding.
Multiple documents are not separated and they are fed in the same one feeding operation.

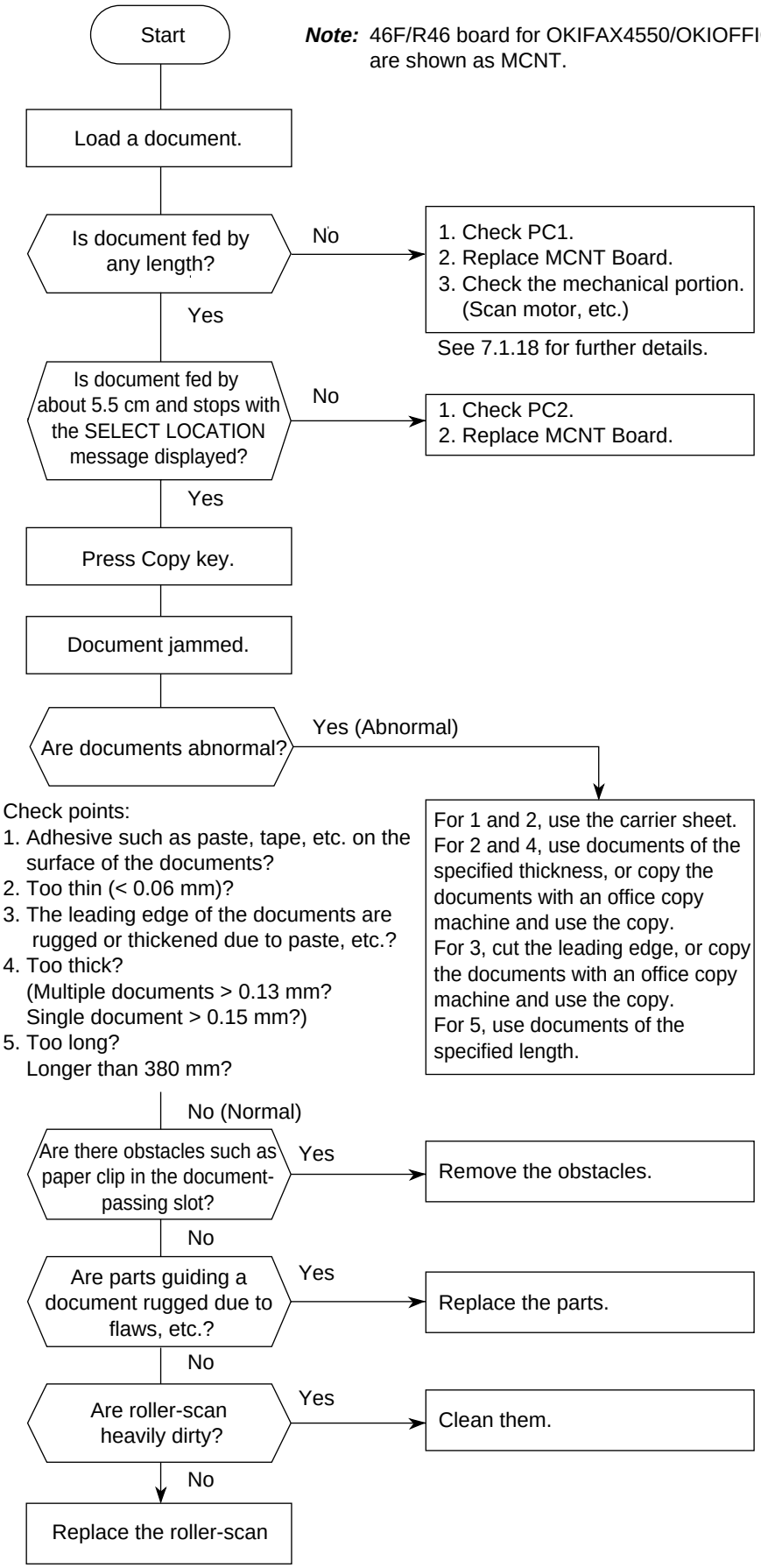


7.20 Document Skew


Start
Are the document guides set to meet the document width?
Are the documents straightly loaded along the guides?
No
1. Set the guides to meet the document width.
2. Load the documents straight along the guides.
Yes
The documents have the same width?
No
Load documents by meeting the same width.
Yes
The thickness of the document:
< 0.08 to 0.13 mm (Multiple doc.)?
< 0.06 to 0.15 mm (Single doc.)?
No
Use documents of the left specification.
Yes
The documents are normal?
No
Use the carrier sheet.
Check points:
1. Adhesive such as paste, tape, etc. on the surface of the documents?
2. The leading edges of the documents are rugged due to paste, etc.?
Yes (Normal)
The control panel unit is closed firmly?
No
Close the control panel unit.
Yes
Are there obstacles such as pieces of paper in the document-passing slot?
Yes
Remove the obstacles.
No
Is the document-passing slot rugged due to flaws, etc.?
Yes
Replace the rugged parts.
No
A


A
Is separation rubber dirty?
Yes
Clean it.
No
Are pinch rollers pressed normally by the springs? (After pushing them by fingers, do they return back to the original positions?)
No
Set them properly.
Are roller-scan dirty?
Yes
Clean them.
No
Are roller-scan worn or slippery?
Yes
Replace it.
No
Is roller-ADF dirty?
Yes
Clean it.
No
Replace the roller-ADF, the roller-scan and/or the pinch rollers.

7.21 Document Jam



7.22 Printer Unit

7.22.1 Precautions

1. Points to check before correcting image troubles
   (1) Is the printer being run in proper ambient conditions?
   (2) Have the supplies (toner) and the routine replacement part (EP unit) been replaced properly?
   (3) Is the recording paper normal?
   (4) Has the EP unit been loaded properly?

2. Tips for correcting image troubles
   (1) Do not touch, or bring foreign matter into contact with the surface of the drum.
   (2) Do not expose the drum to direct sunlight.
   (3) Keep hands off the fuser unit as it is heated during operation.
   (4) Do not expose the drum to light for longer than 5 minutes at room temperature.

7.22.2 Troubleshooting Flow Charts of Printer Unit

Overall troubleshooting flow chart:

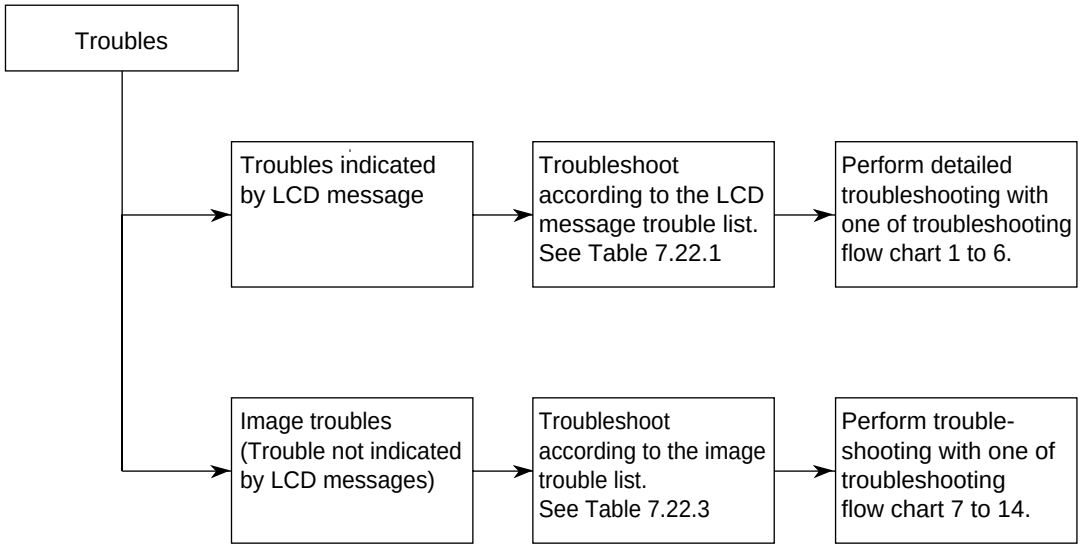
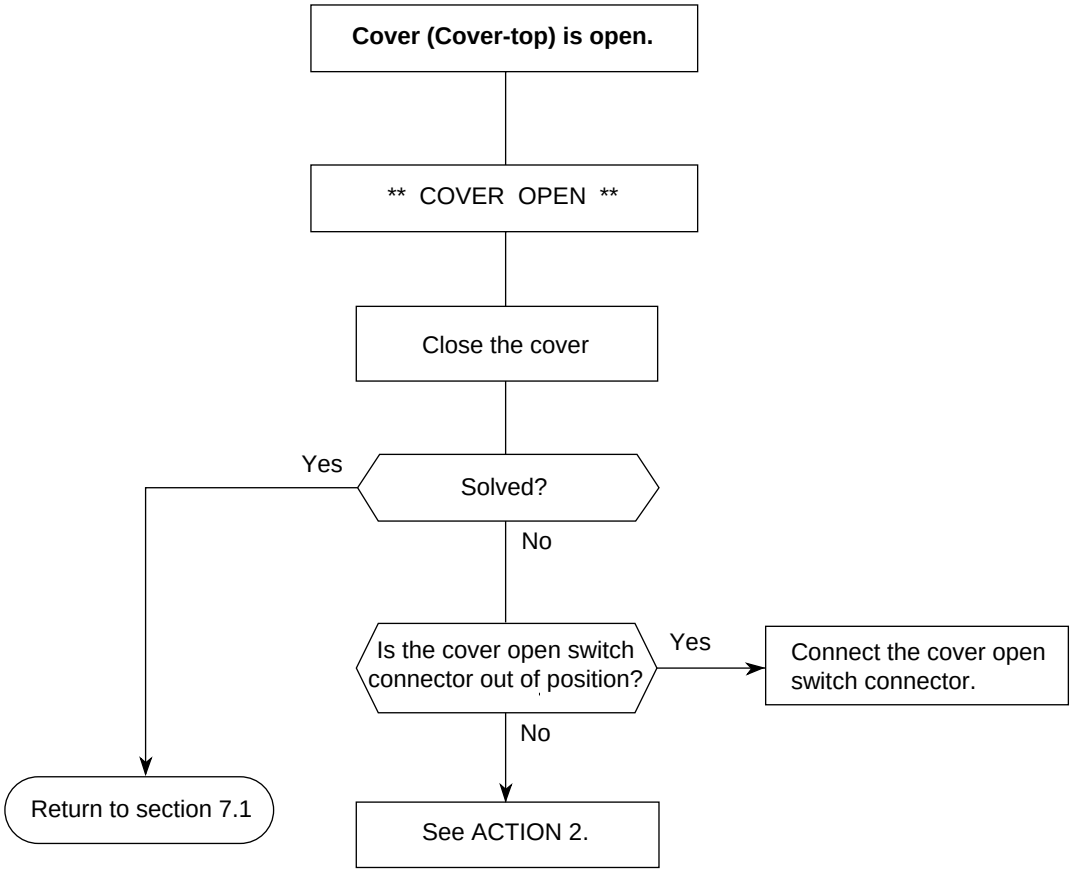

Troubles
Troubles indicated by LCD message
Troubleshoot according to the LCD message trouble list. See Table 7.22.1
Perform detailed troubleshooting with one of troubleshooting flow chart 1 to 6.
Image troubles (Trouble not indicated by LCD messages)
Troubleshoot according to the image trouble list. See Table 7.22.3
Perform trouble-shooting with one of troubleshooting flow chart 7 to 14.

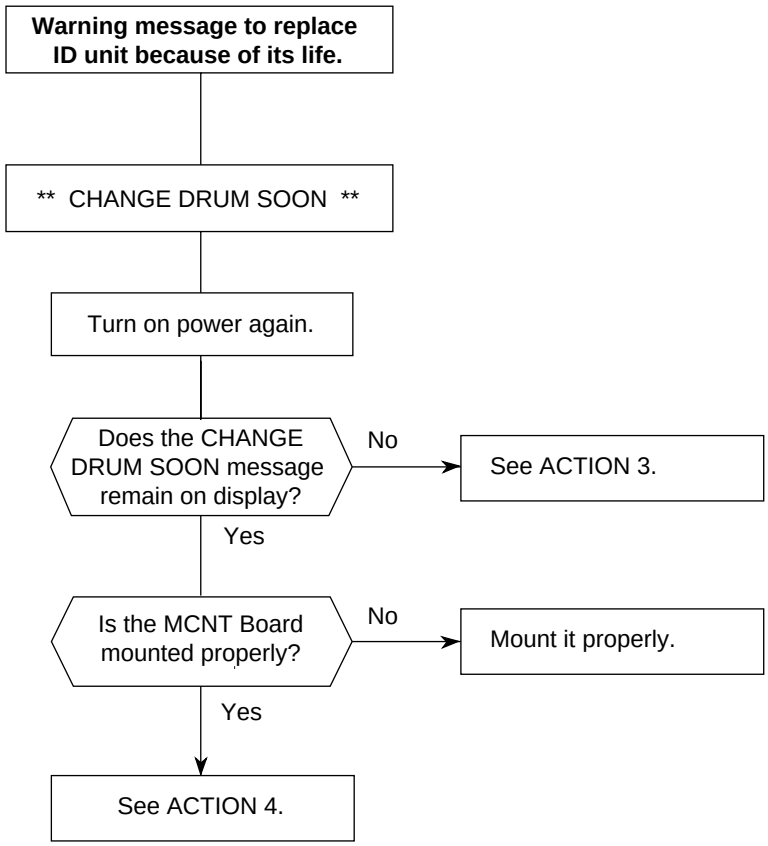
Table 7.22.1 LCD Message Trouble List

Category	LCD message display	Trouble	Troubleshooting flow chart number
Cover open	14:14 COVER OPEN	The cover (cover-top) is open.	1
Image drum alarm	14:14 CHANGE DRUM SOON	Warning message to replace EP unit because of its life.	2
Engine errors	PRINTER ALARM 2 TEL PLEASE CONFIRM	Engine controller error	3
	PRINTER ALARM 4 TEL PLEASE CONFIRM	Fuser unit thermal error	4
Recording paper/ jam error	PAPER OUT/JAM FAX REPLACE PAPER	Recording paper feed jam, transport jam, ejection jam, recording size error	5
Paper cassette request	PAPER OUT/JAM FAX REPLACE PAPER	No recording paper tray or no recording paper	6
Daily status	TONER LOW FAX REPLACE TONER CART.	Toner is running short. ***Note:*** No toner memory RX is ON.	
	14:14 FAX REPLACE TONER CART.	Toner is running short. ***Note:*** No toner memory RX is OFF.	

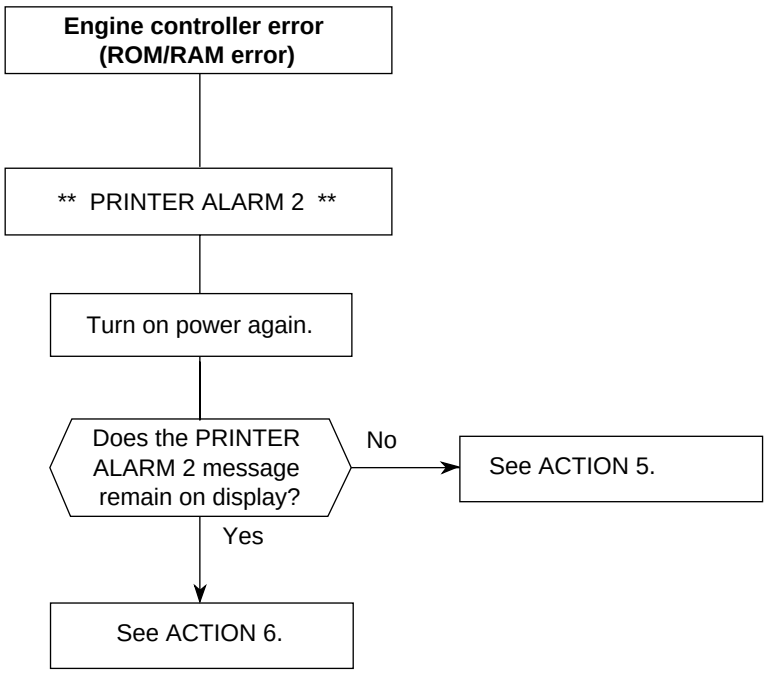
Troubleshooting flow chart 1:



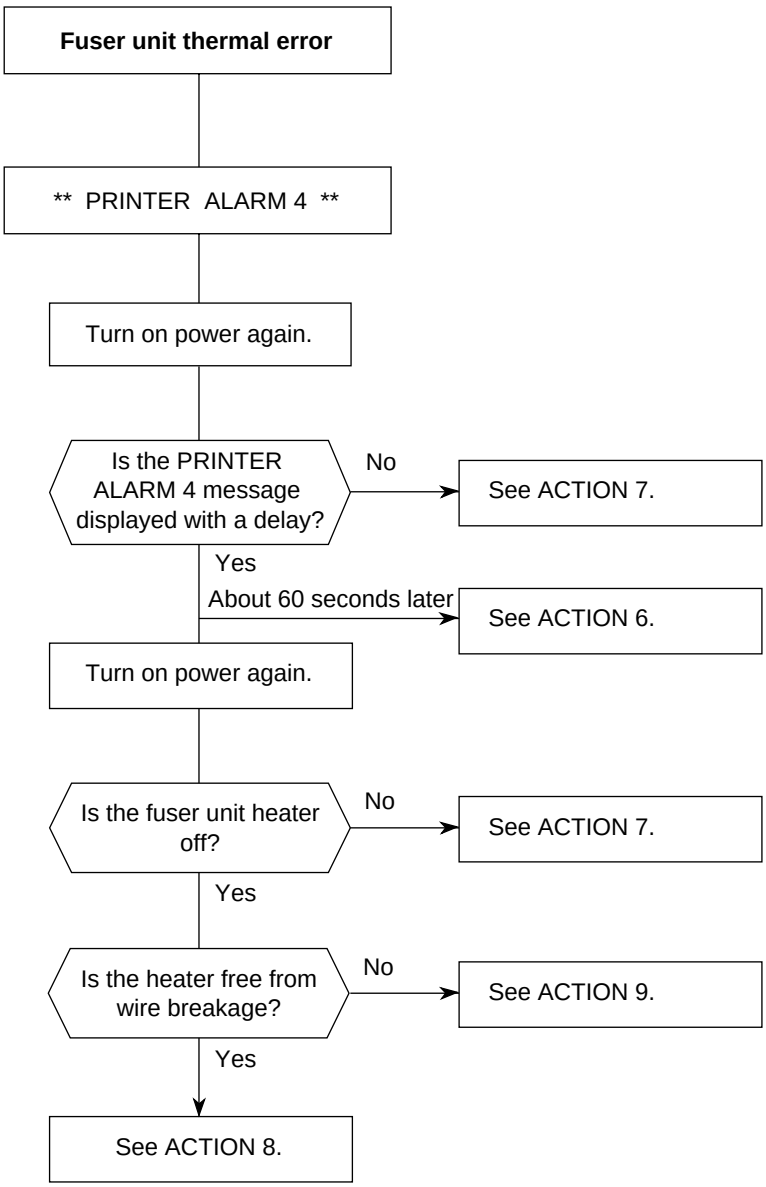
Troubleshooting flow chart 2:



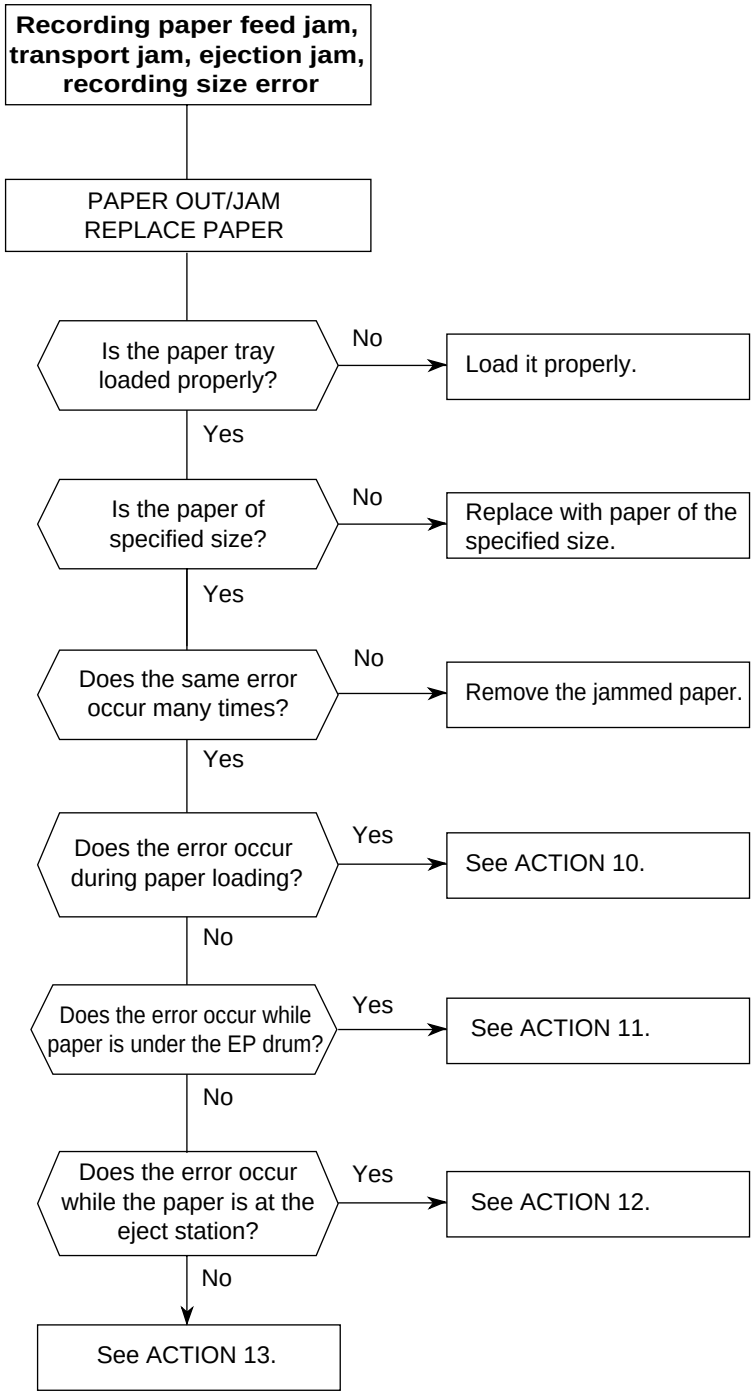
Troubleshooting flow chart 3:



Troubleshooting flow chart 4:



Troubleshooting flow chart 5:



Troubleshooting flow chart 6:
No recording paper tray or not recording paper

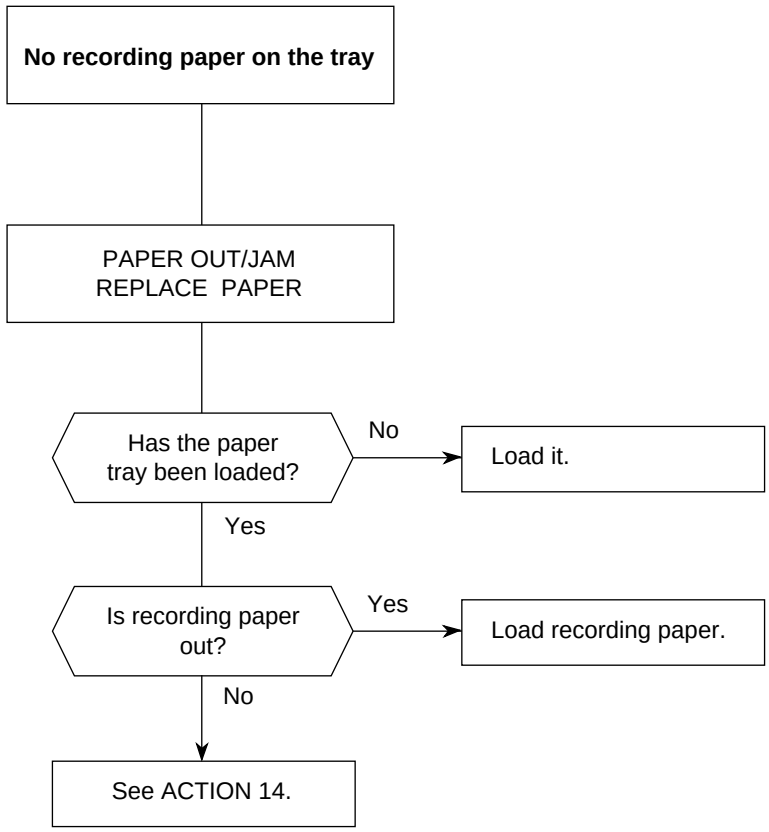


Table 7.22.2 Action Items (Printer Unit-LCD Message)

No.	ACTION	No.	ACTION
1	Check MCNT Board.	8	Check connection between the PWU and the fuser assembly,heater, thermostat.
2	Check P2H/P6L Board cover open switch, cover open switch connection. Check MCNT Board.	9	Check PWU.
3	Return to Section 7.1.	10	Check Sensor-E, magnet-H, hopping roller, pulse motor, MCNT Board, Action of Idle gear-P.
4	Replace the EP Unit. And clear Drum Count, Section 6.3.	11	Check Gear-T, MCNT Board, P2H/P6L Board.
5	Check installation of MCNT board, POWER SUPPLY UNIT board.	12	Check exit sensor lever, PWU
6	Check MCNT Board.	13	Check MCNT Board.
7	Check thermister (resistance of about 200 kilo ohms at room temperature and about 140 kilo ohms at high temperature), POWER SUPPLY UNIT.	14	Check PWU, MCNT board.

Note: 46F/R46 board for OKIFAX 4550/OKIOFFICE87 is shown as MCNT.

Table 7.22.3 Image Troubles

Abnormal Symptom	Reference Figure	Troubleshooting Flow Chart No.
Images are light or blurred as a whole.	Fig.Ⓐ	7
The blank background is smeared.	Fig.Ⓑ	8
Blank paper is output.	Fig.Ⓒ	9
Black belts or black stripes in vertical direction.	Fig.Ⓓ	10
Periodic abnormal printing.	Fig.Ⓔ	11
Some parts not printed.	—	12
White belts or some white stripes in vertical direction.	Fig.Ⓕ	13
Poor fusing (Images are blurred or peeled off when touched by hands)	—	14

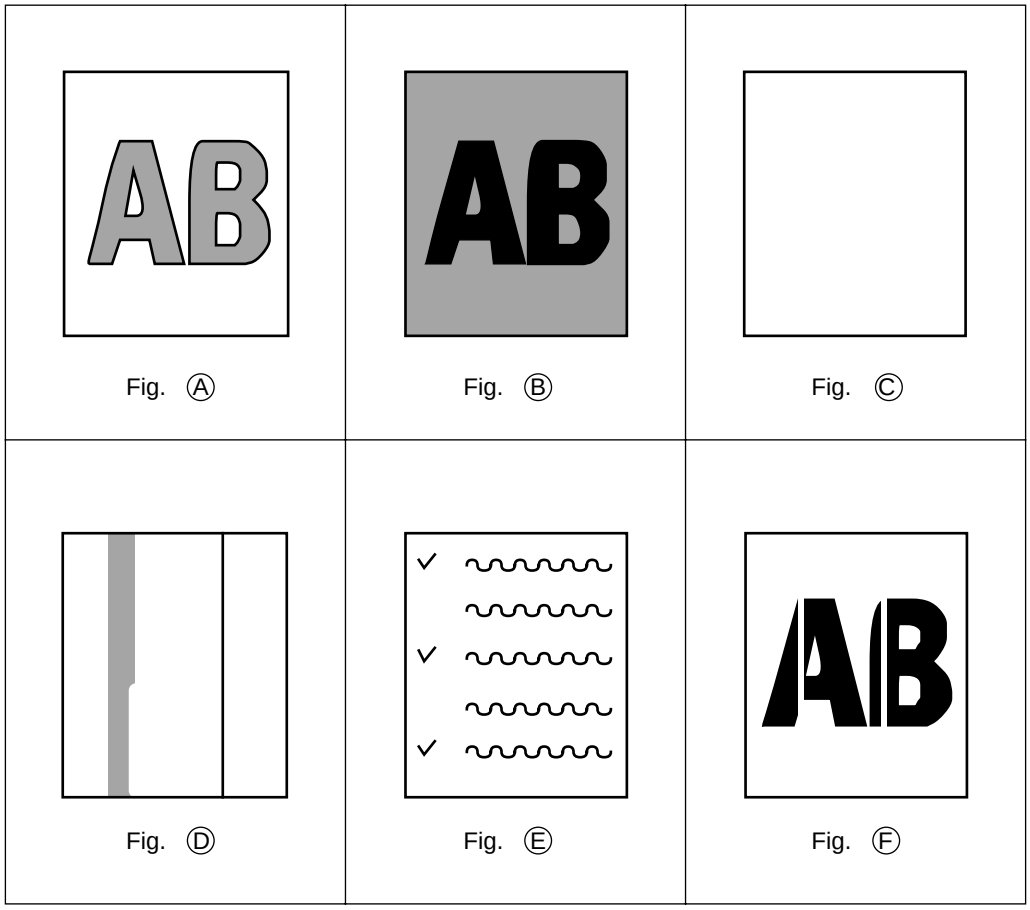
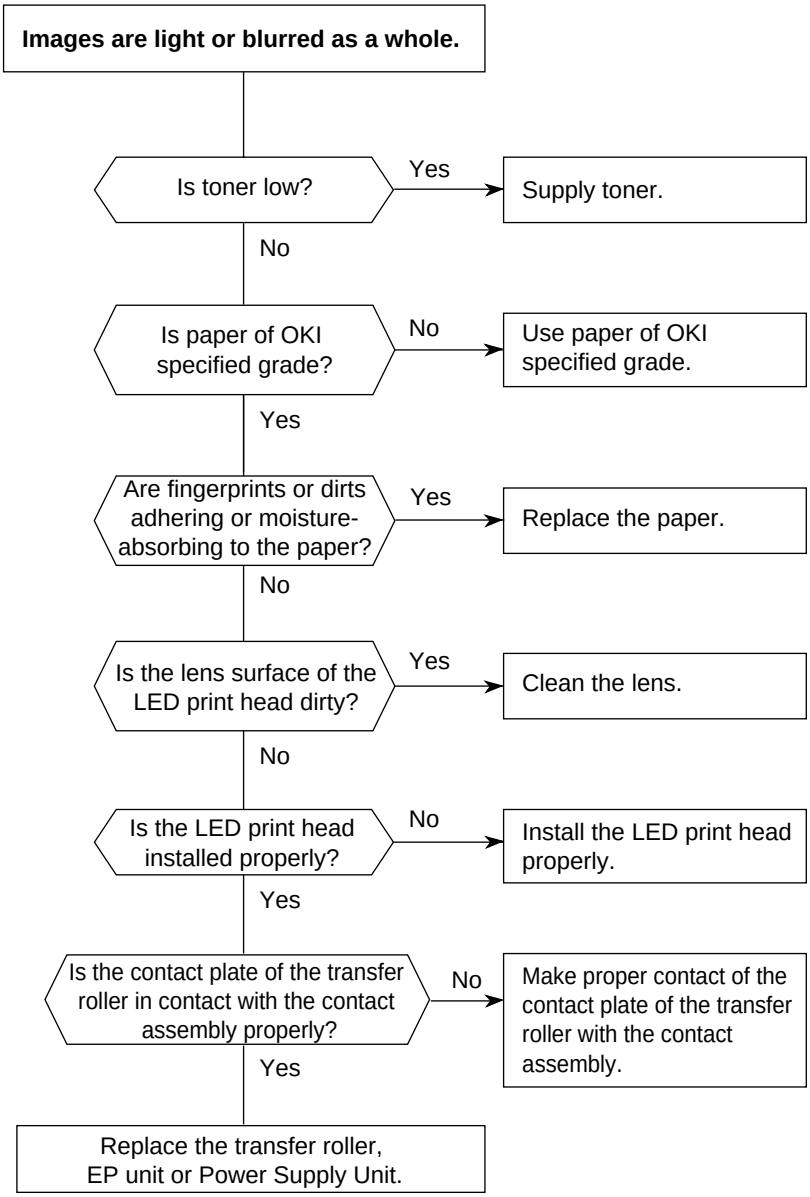
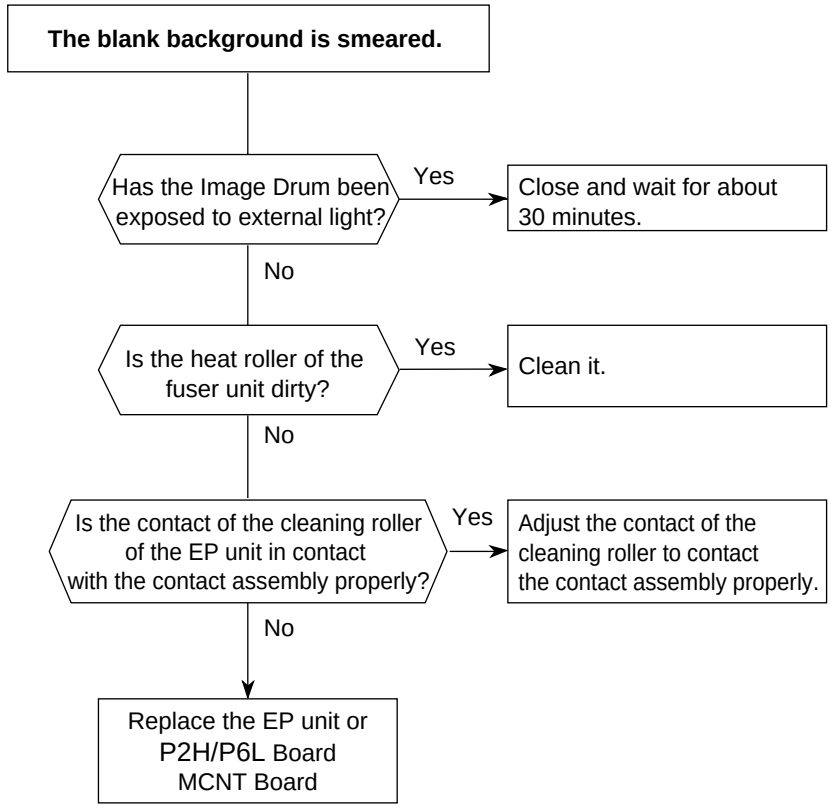


Figure 7.22.1 Abnormal Symptoms of Image Troubles (Example)

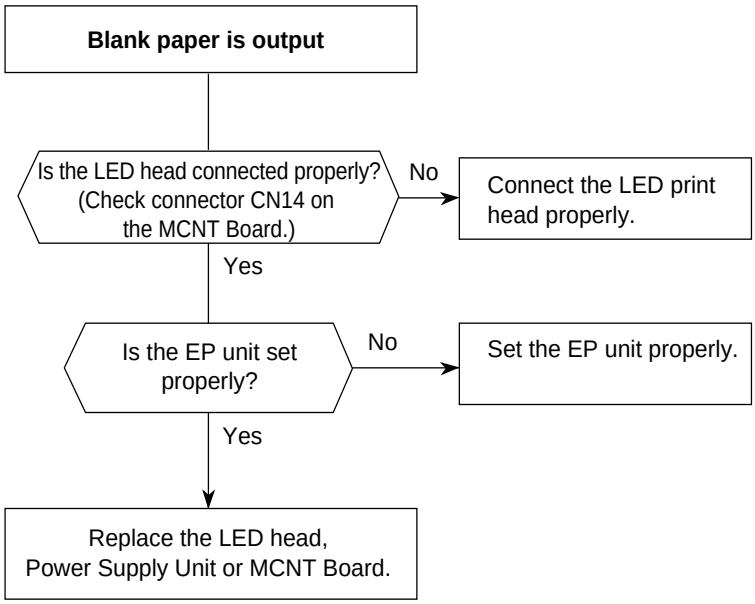
Troubleshooting flow chart 7:


Images are light or blurred as a whole.
Is toner low?
Yes
Supply toner.
No
Is paper of OKI specified grade?
No
Use paper of OKI specified grade.
Yes
Are fingerprints or dirts adhering or moisture-absorbing to the paper?
Yes
Replace the paper.
No
Is the lens surface of the LED print head dirty?
Yes
Clean the lens.
No
Is the LED print head installed properly?
No
Install the LED print head properly.
Yes
Is the contact plate of the transfer roller in contact with the contact assembly properly?
No
Make proper contact of the contact plate of the transfer roller with the contact assembly.
Yes
Replace the transfer roller, EP unit or Power Supply Unit.

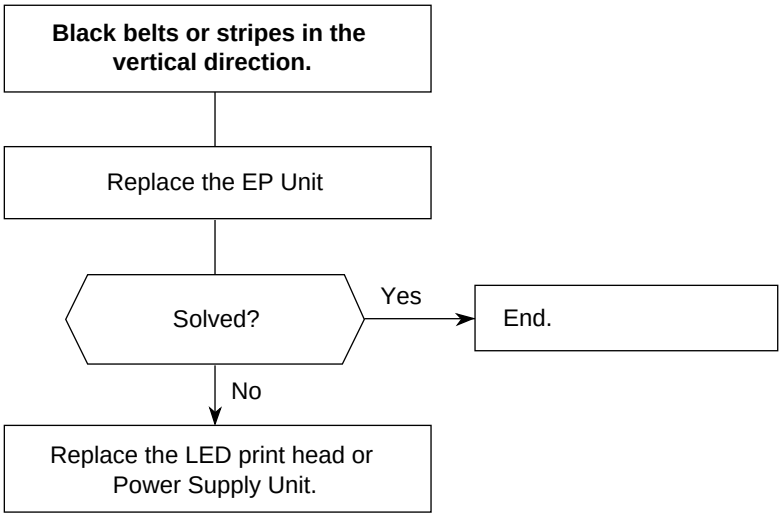
Troubleshooting flow chart 8:


The blank background is smeared.
Has the Image Drum been exposed to external light?
Yes
Close and wait for about 30 minutes.
No
Is the heat roller of the fuser unit dirty?
Yes
Clean it.
No
Is the contact of the cleaning roller of the EP unit in contact with the contact assembly properly?
Yes
Adjust the contact of the cleaning roller to contact the contact assembly properly.
No
Replace the EP unit or
P2H/P6L Board
MCNT Board

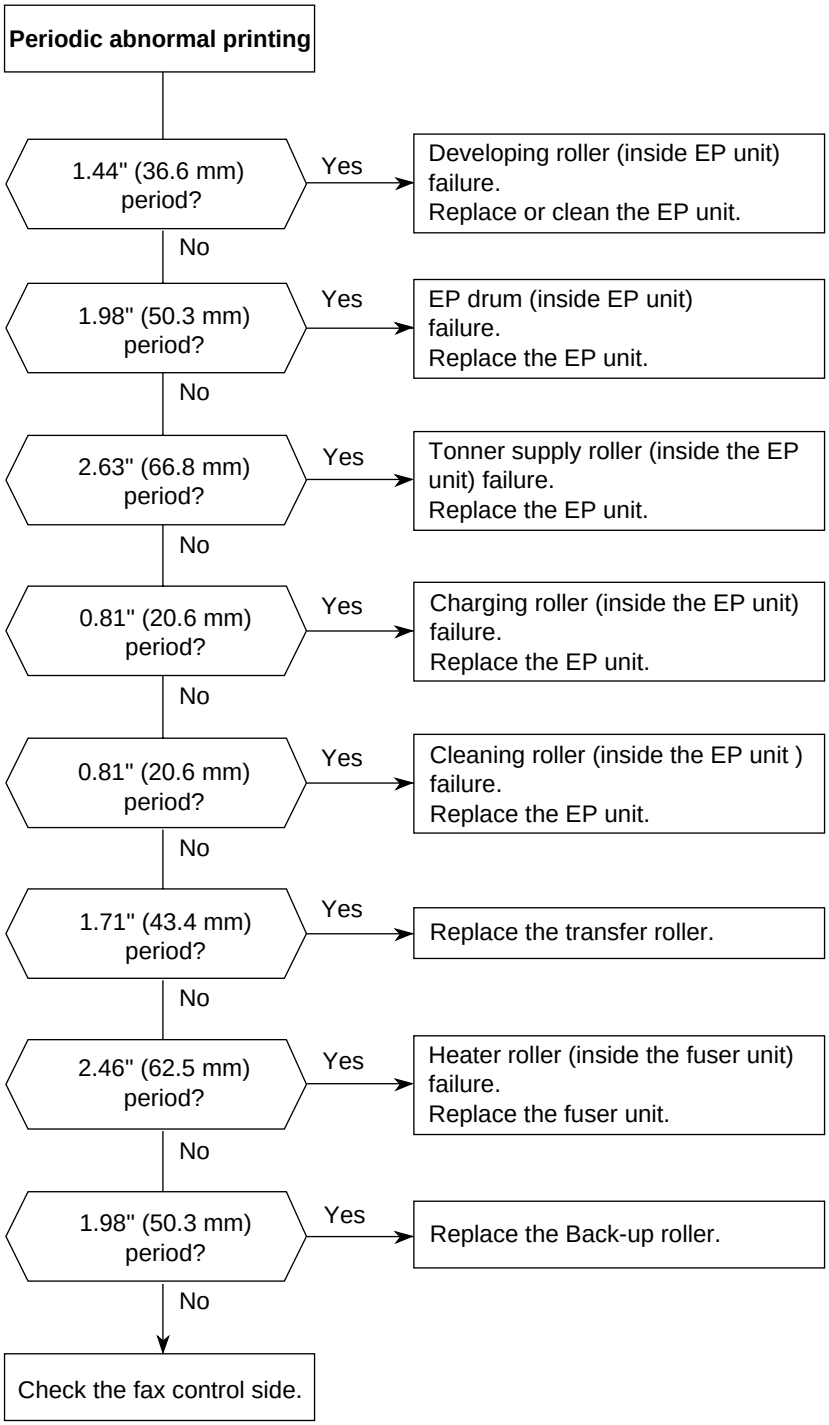
Troubleshooting flow chart 9:


Blank paper is output
Is the LED head connected properly? (Check connector CN14 on the MCNT Board.)
No
Connect the LED print head properly.
Yes
Is the EP unit set properly?
No
Set the EP unit properly.
Yes
Replace the LED head,
Power Supply Unit or MCNT Board.

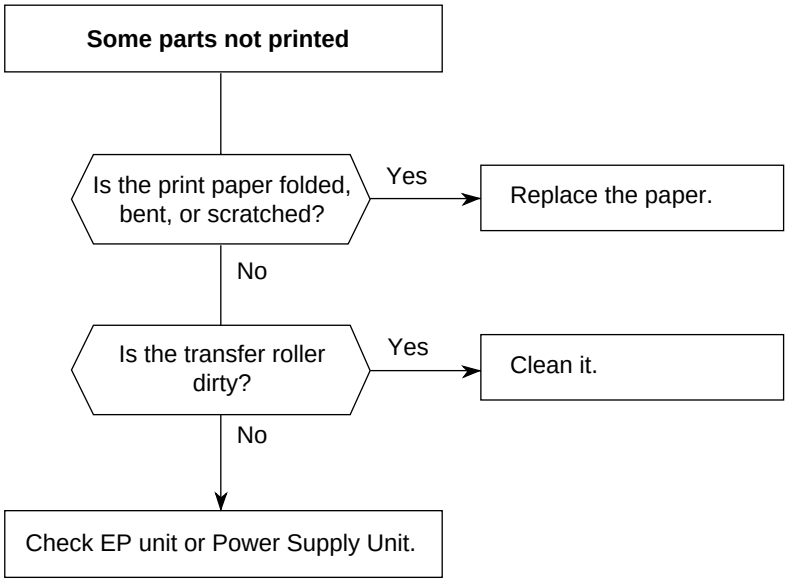
Troubleshooting flow chart 10:



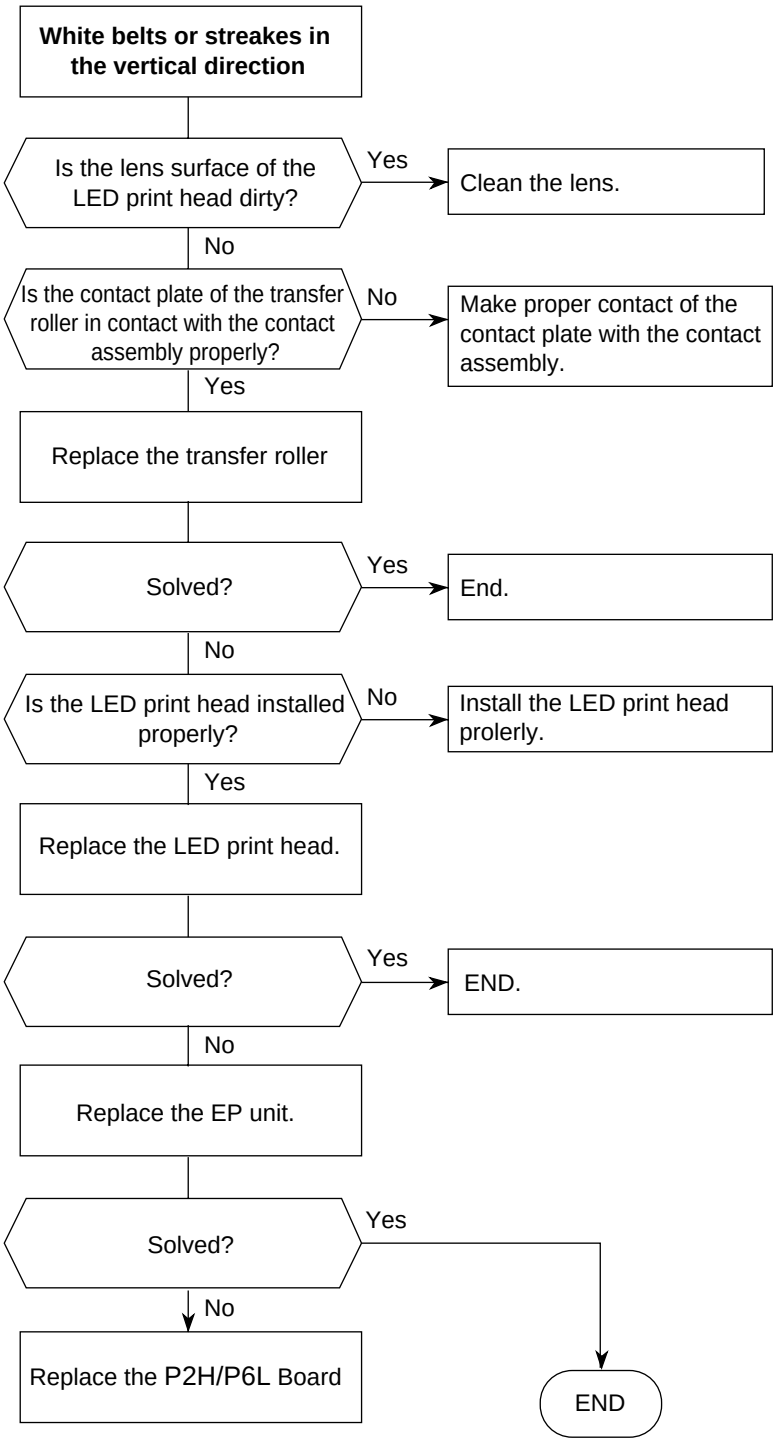
Troubleshooting flow chart 11:



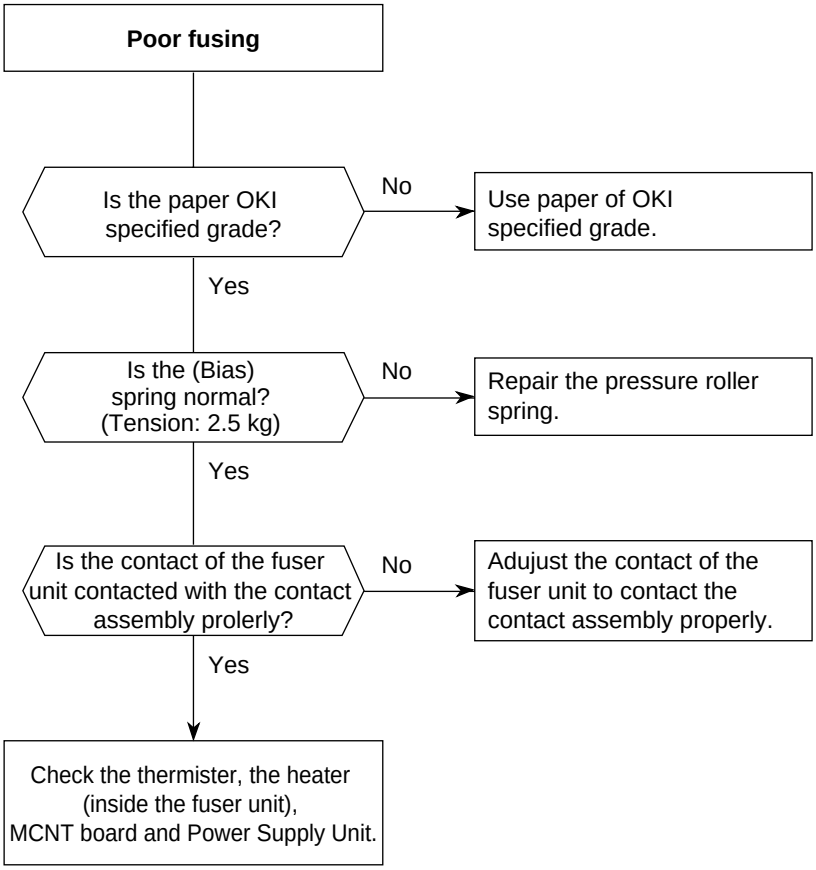
Troubleshooting flow chart 12:



Troubleshooting flow chart 13:



Troubleshooting flow chart 14:


Poor fusing
Is the paper OKI specified grade?
No
Use paper of OKI specified grade.
Yes
Is the (Bias) spring normal? (Tension: 2.5 kg)
No
Repair the pressure roller spring.
Yes
Is the contact of the fuser unit contacted with the contact assembly prolerly?
No
Adujust the contact of the fuser unit to contact the contact assembly properly.
Yes
Check the thermister, the heater (inside the fuser unit), MCNT board and Power Supply Unit.

8. DIPSWITCHS SETTING TABLES FOR EN9/INU NCU BOARDS

EN9 (Setting as of Jan. 25, 2000)

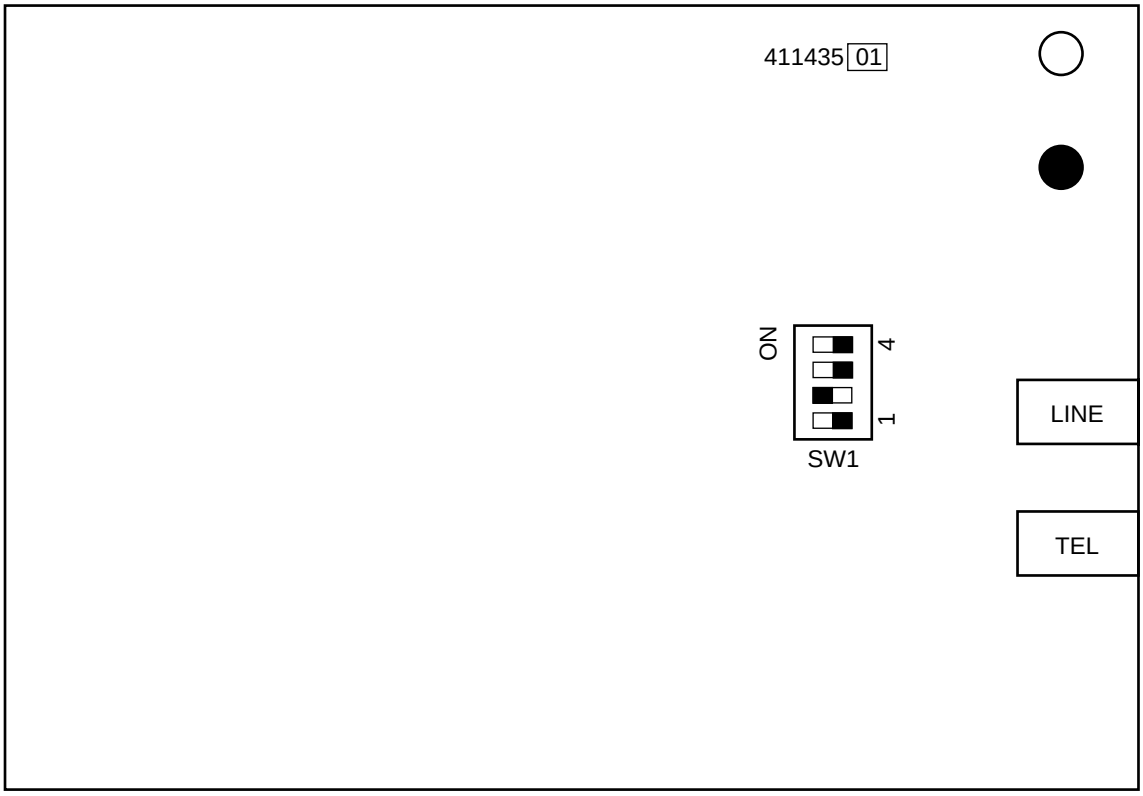
Each country's hardware parameters comparison table.

Dip-switch No.		EC countries (except UK and France)	UK	France	Remarks
SW1	1	OFF	ON	ON	Shunt wire
	2	ON	OFF	ON	Ring detection
	3	OFF	ON	ON	Ring detection
	4	OFF	OFF	OFF	Not used

1 EC Countries (except UK and France) (41143501)

This section gives the following instruction.
- DIP switch setting
- Screw tightening position (a black dot)

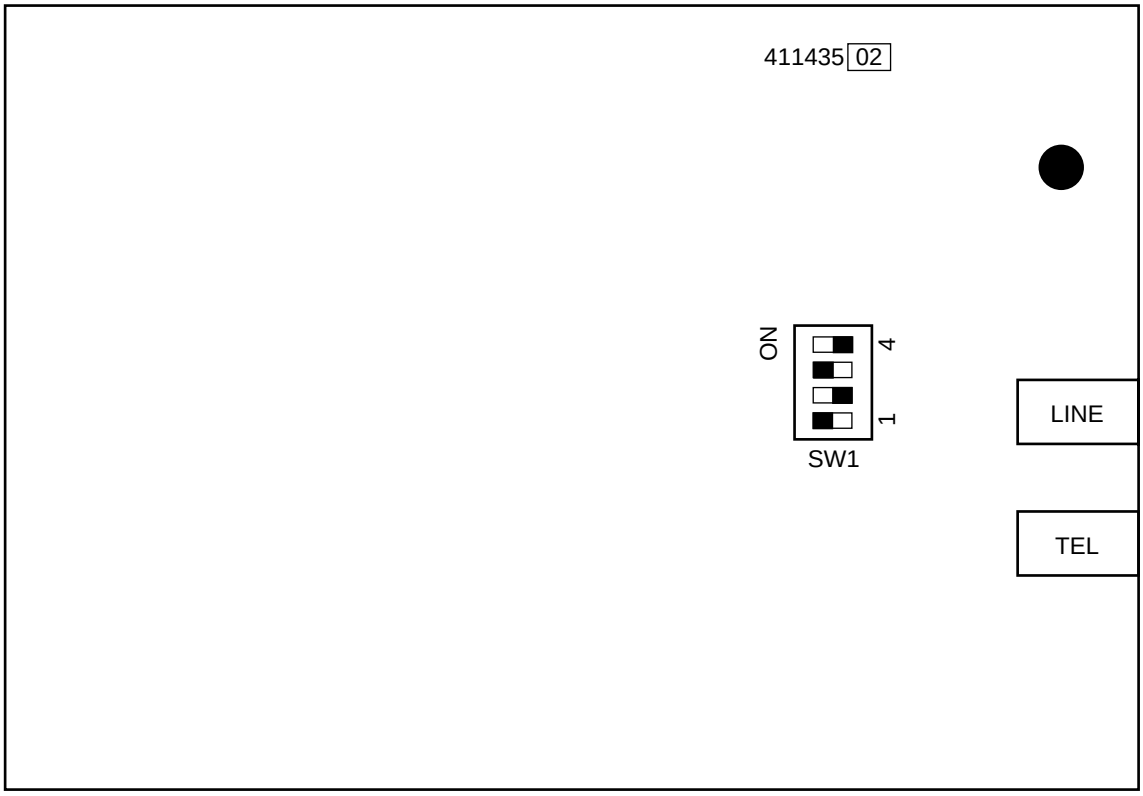
For detail, see the figure below.



2 UK (41143502)

This section gives the following instruction.
- DIP switch setting
- Screw tightening position (a black dot)

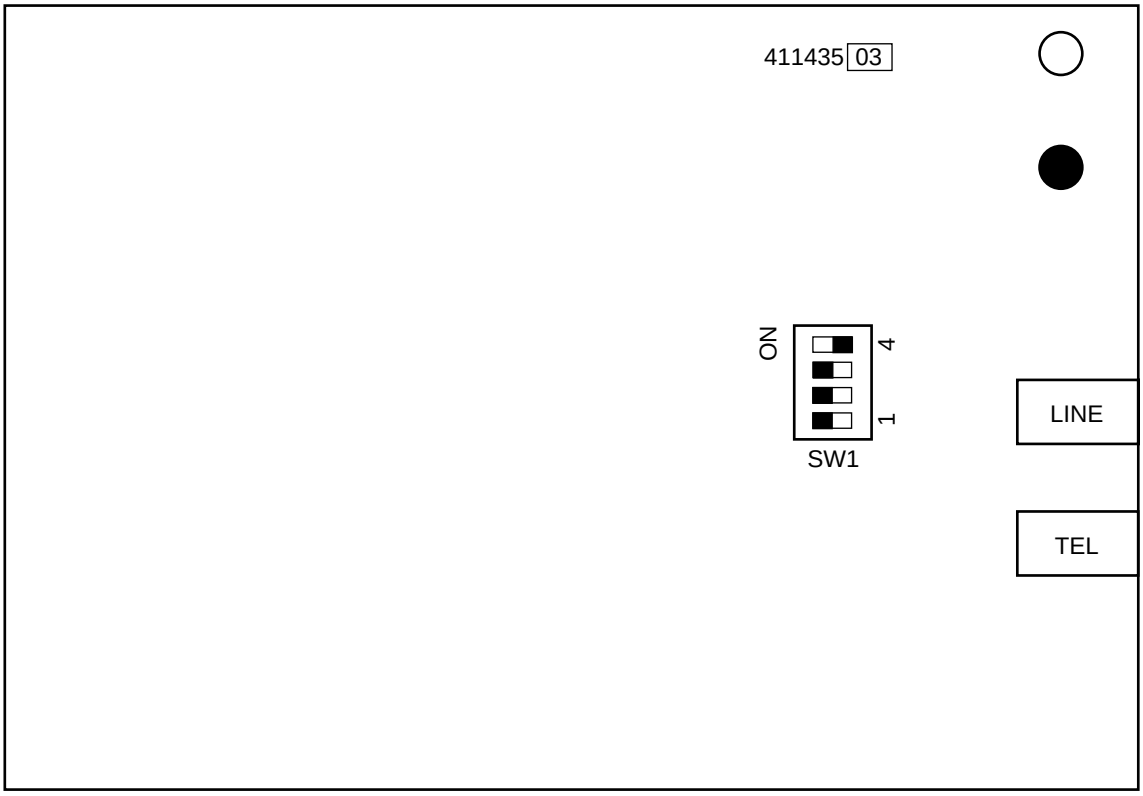
For detail, see the figure below.



3 France (41143503)

This section gives the following instruction.
- DIP switch setting
- Screw tightening position (a black dot)

For detail, see the figure below.



INU (Setting as of Jan. 25, 2000)

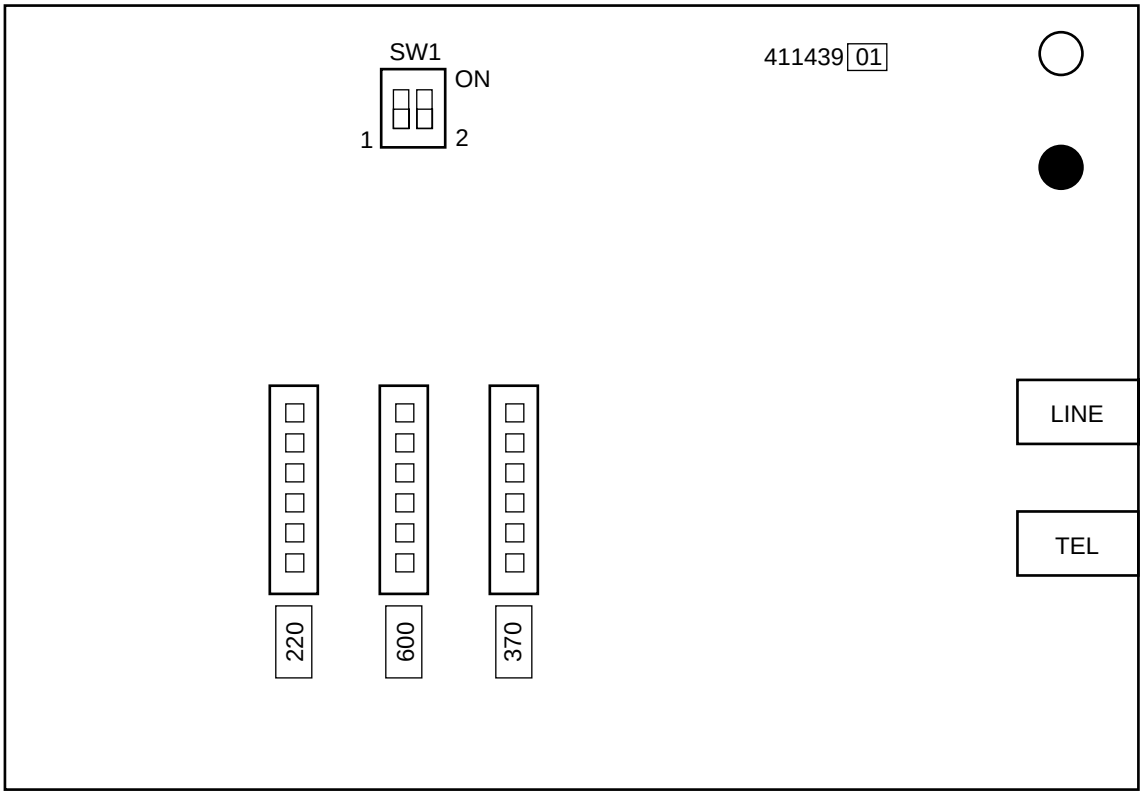
Each country's hardware parameters comparison table.

Dip-switch No.		USA Canada	Australia	New Zealand	Singapore China Malaysia	Poland (non-EC countries)	Remarks
SW1	1		ON	ON	ON	OFF	Ring Impedance
	2		OFF	OFF	OFF	ON	Ring Impedance

1 US, Canada (41143901)

This section gives the following instruction.
- Screw tightening position (a black dot)

For detail, see the figure below.

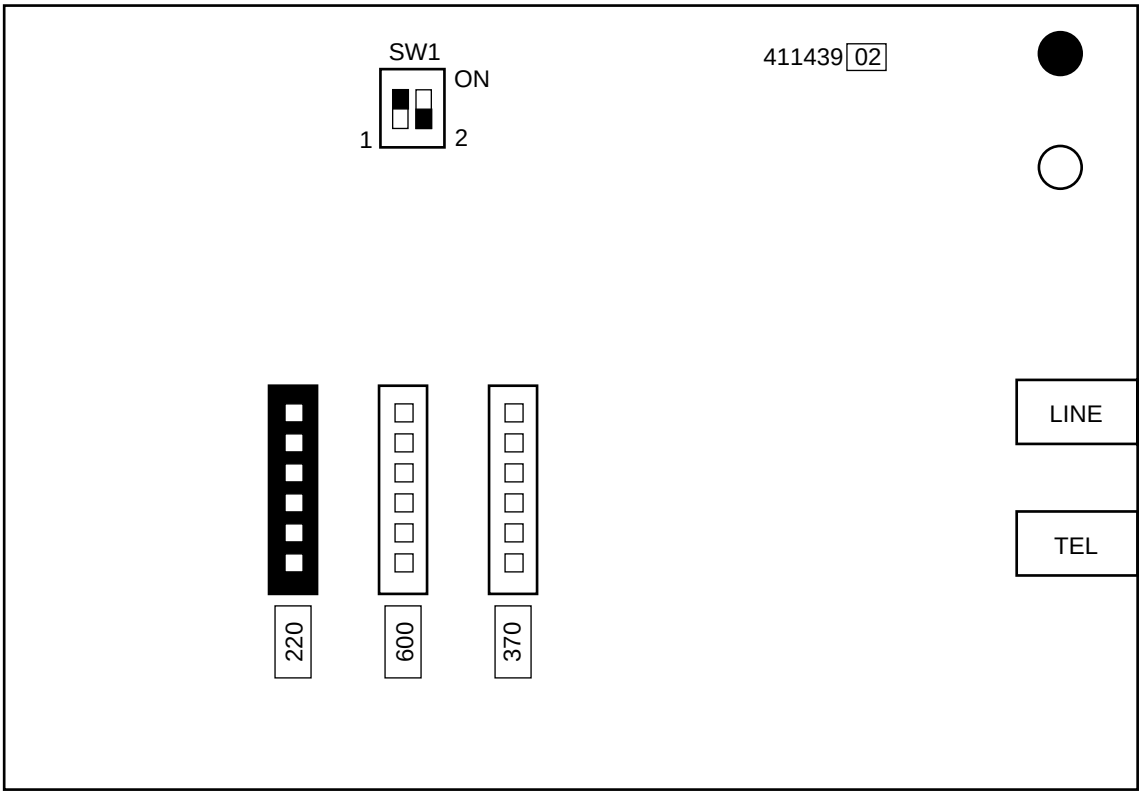


* Connector for short-plug and SW1 are not mounted.

2 Australia (41143902)

This section gives the following instruction.
- DIP switch setting
- Short-plug location
- Screw tightening position (a black dot)

For detail, see the figure below.

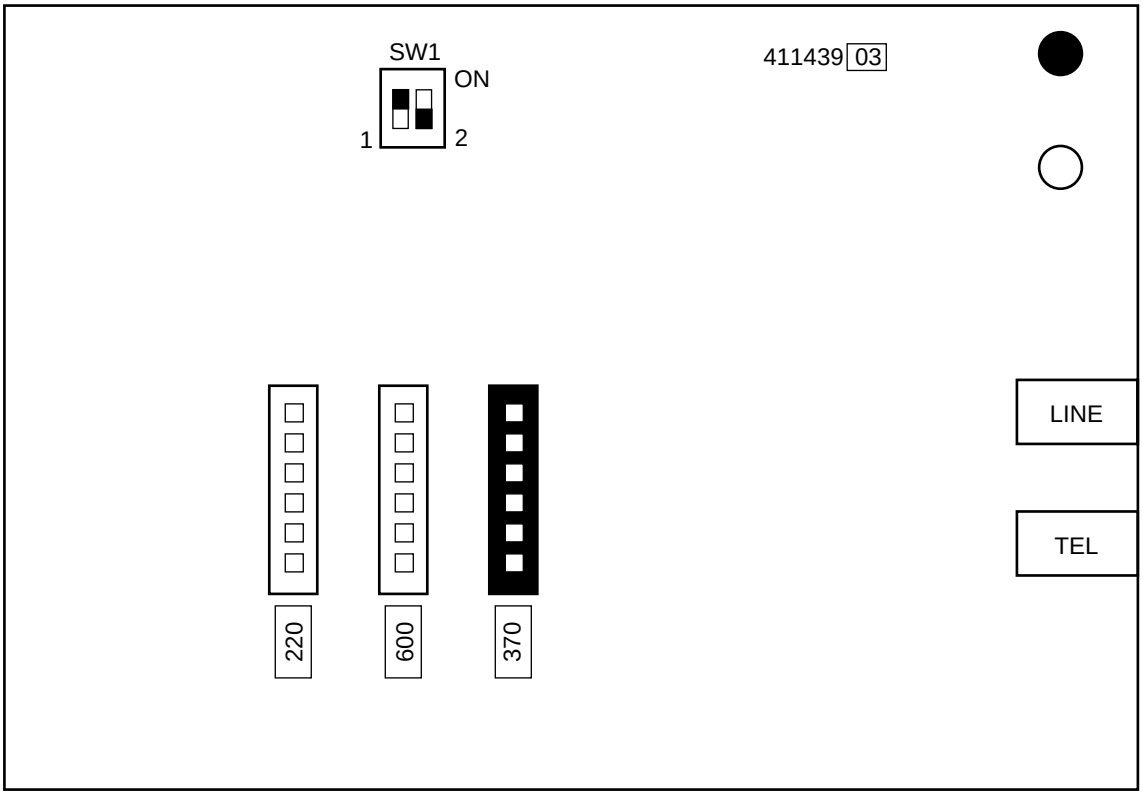


3 New Zealand (41143903)

This section gives the following instruction.

- DIP switch setting
- Short-plug location
- Screw tightening position (a black dot)

For detail, see the figure below.

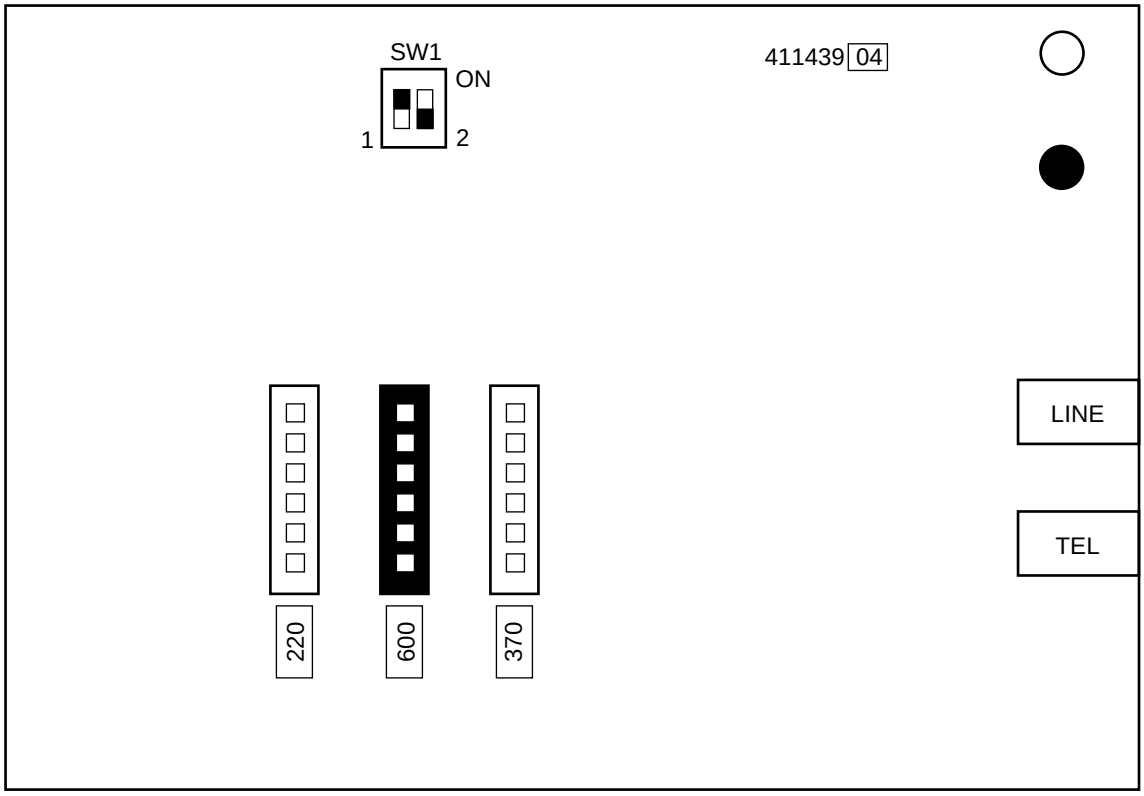


4 Singapore, China, Malaysia (41143904)

This section gives the following instruction.

- DIP switch setting
- Short-plug location
- Screw tightening position (a black dot)

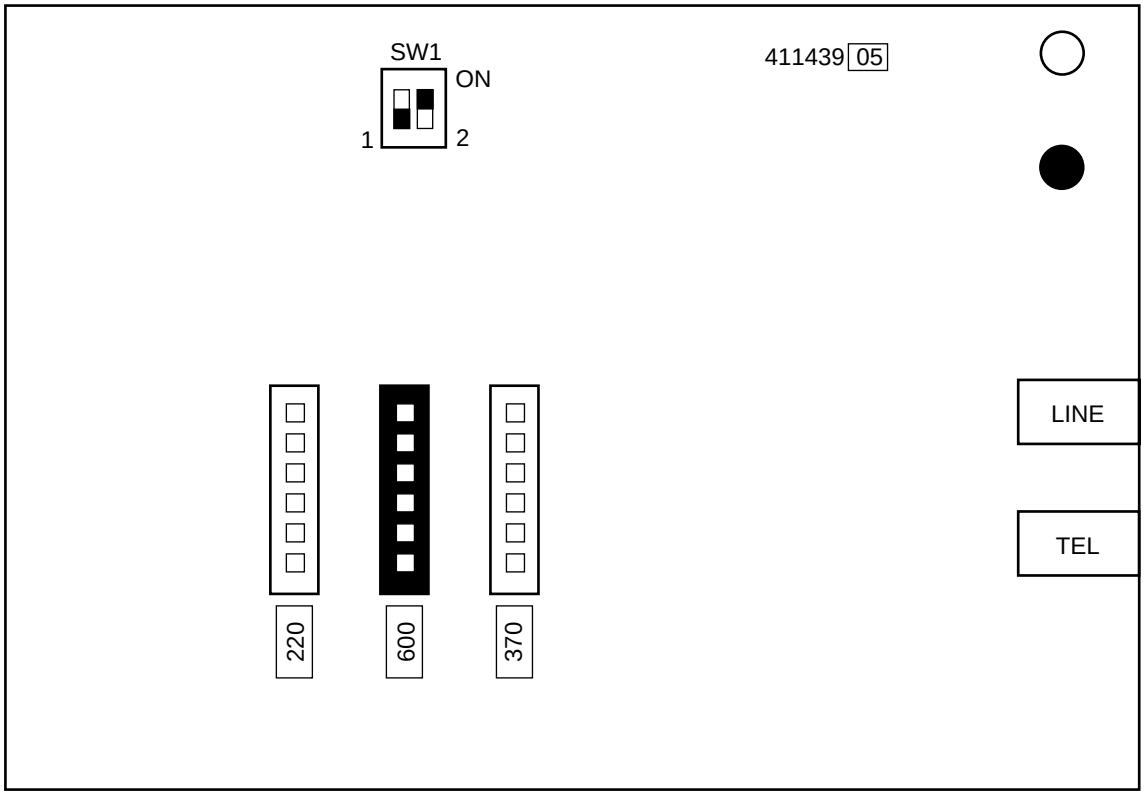
For detail, see the figure below.



5 Poland (non-EC countries) (41143905)

This section gives the following instruction.
- DIP switch setting
- Short-plug location
- Screw tightening position (a black dot)

For detail, see the figure below.



APPENDIX A PC BOARD DESCRIPTIONS AND OPERATION

1. Unit Configuration and Block Diagram

OKIFAX4550/OKIOFFICE87 ASSEMBLY

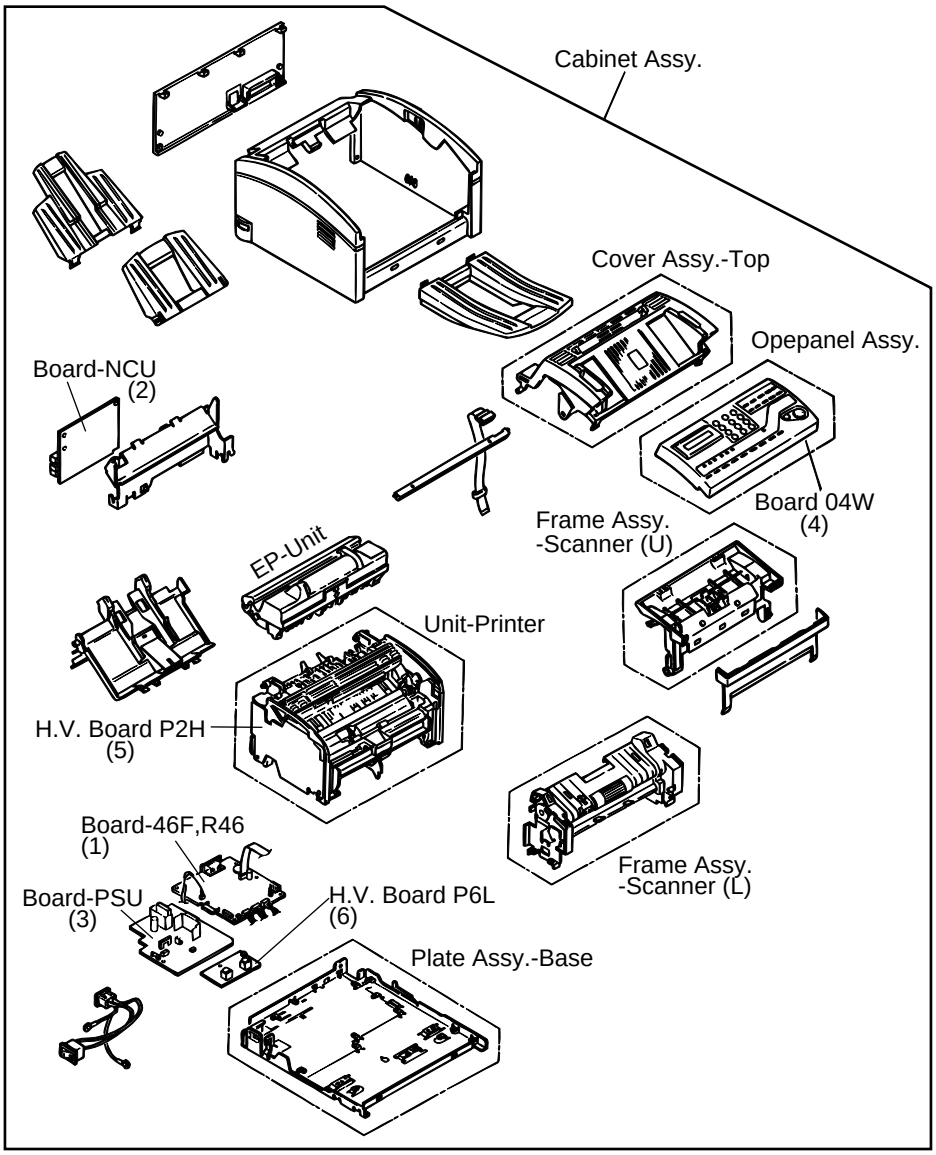


Figure A.1 Unit Configuration (Modifying)

(1) Main control board (46F: OKIFAX4550, R46: OKIOFFICE87)
(2) Network control unit (NCU)
(3) Power supply unit (MPW1446 (230V), MPW1546 (120V)
(4) Operation panel board (04W)
(5) High Voltage Board (P2H)
(6) High Voltage Board (P6L)

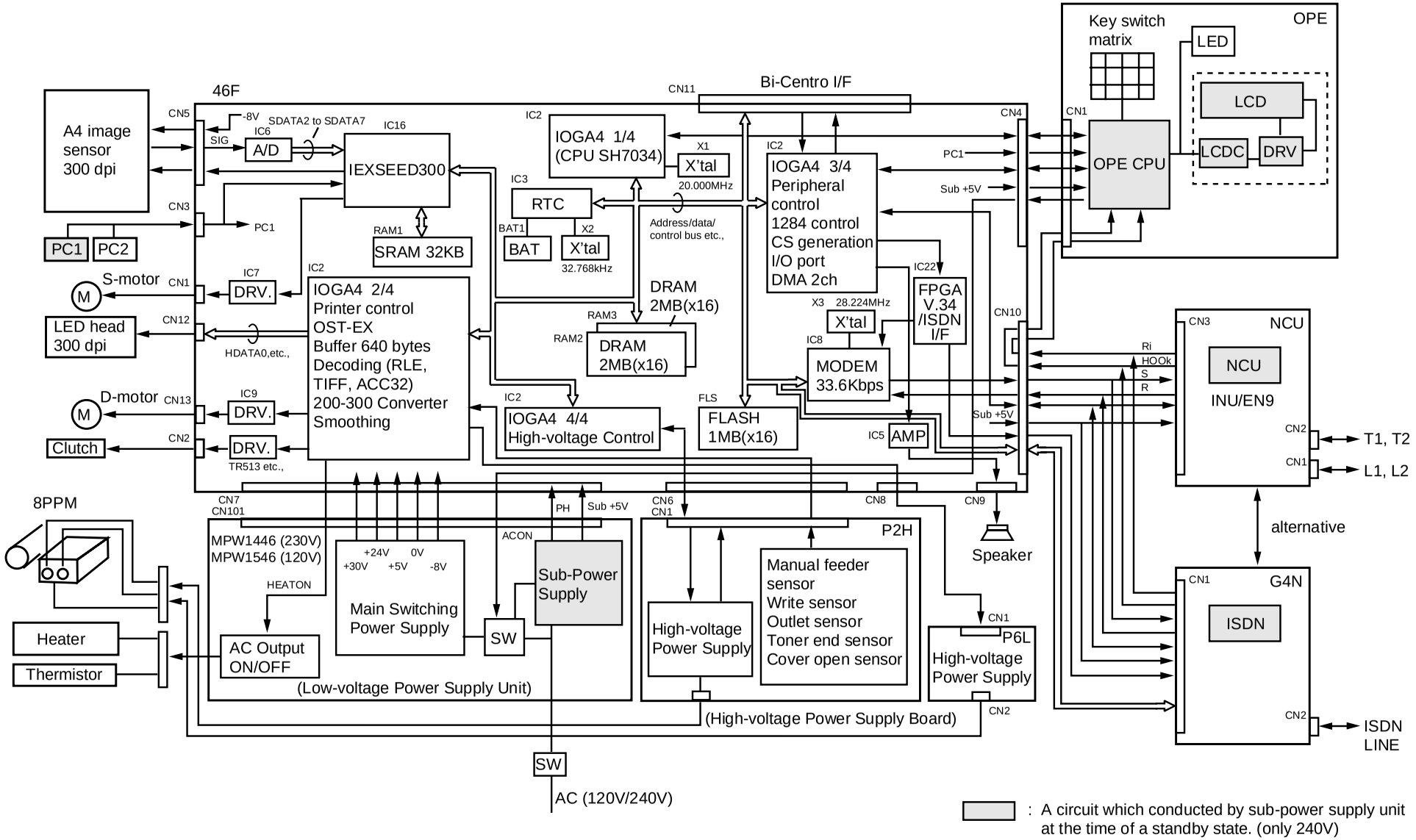


Figure A.2 OKIFAX 4550 Block Diagram

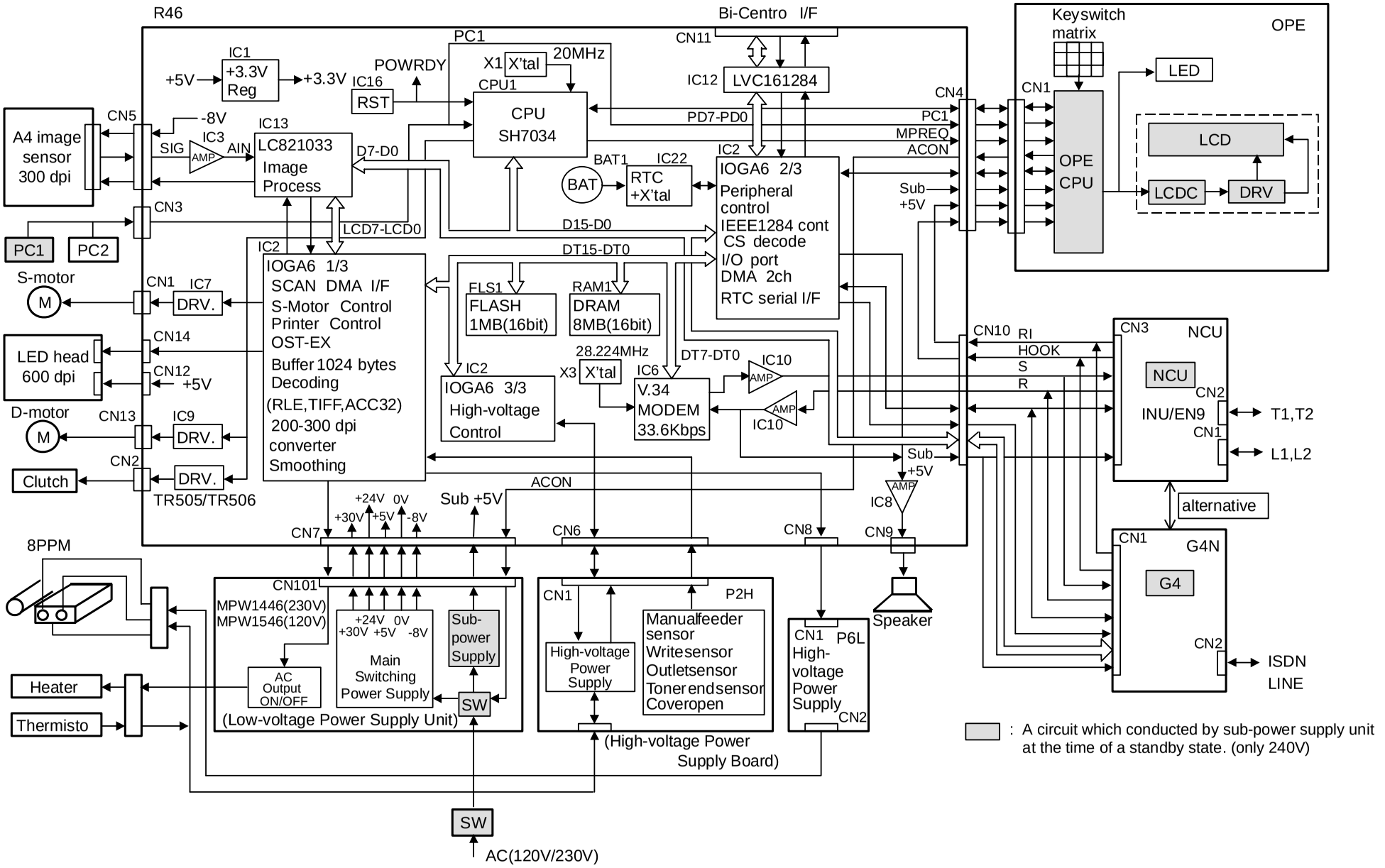


Figure A.3 OKIOFFICE87 Block Diagram

1.1 The unit configuration is as follows:

Meaning of abbreviations used in Block Diagram

A/D	: Analog-to-digital converter
AMP	: Amplifier
BAT	: Battery
CNi	: Connector number i
CPU	: Central processing unit
D-MOTOR	: Drum motor
DRV	: Motor drive
DRAM	: Dynamic random-access memory
IEXSEED300	: Image proccessing gate array
LC821033	: Image process
FLASH	: Flash memory
IOGA4, IOGA6	: Input output gate array
PCi	: Photocoupler number i
POW.UNIT	: Power supply unit
RTC	: Real time clock
S-MOTOR	: Send motor
SRAM	: Static random-access memory
X’tal	: Crystal oscillator

1.2 Function of Each Unit

The section describes the principal functions of the individual units of the OKIFAX4550/OKIOFFICE87 electrical sections.

Figure A.2/A.3 shows the pertinent block diagram.

(1) 46F board (OKIFAX4550)
- IOGA4 (Input/output gate array 4) 1/4: CPU SH7034
  Basic processor
  CPU periheral functions
- IOGA4 (Input/output gate array 4) 2/4, 3/4, 4/4
  Scanned data DMA control
  Printing control
  Peripheral input/output control
- Flash memory (Instead of EP-ROM and SRAM)
  Memory storage for program code
  Memory storage for user/service setting data
- DRAM
  Memory storage for ECM operations, memory broadcast, delayed broadcast, etc.
- Back-up battery circuit
- Real-time clock IC
- Audio monitor circuit
- Contact image sensor control
- I EXSEED300
  Image data processing
- SRAM
  Memory storage for image picture data
- Supervision of the following external statuses:
  Presence of document on hopper
  Presence of document at scanning position
- Send motor control
- Drum motor control
- Modem chip
  Modulation and demodulation for V.34
  Modulation and demodulation for V.33 and V.17
  Modulation and demodulation for V.29 and V.27 ter
  Modulation and demodulation for V.21
  Generation of single-frequency signals for tonal signals
  Detection of single-frequency tonal signals
  Generation of dual time multiple-frequency signals for tone dialing

(2) R46 board (OKIOFFICE87)
- CPU SH7034
  Basic processor
  CPU periheral functions
- IOGA6 (Input/output gate array 6) 1/3, 2/3, 3/3
  Scanned data DMA control
  Printing control
  Peripheral input/output control
- Flash memory (Instead of EP-ROM and SRAM)
  Memory storage for program code
  Memory storage for user/service setting data
- DRAM
  Memory storage for ECM operations, memory broadcast, delayed broadcast, etc.
- Back-up battery circuit
- Real-time clock IC
- Audio monitor circuit
- Contact image sensor control
- LC821033
  Image data processing
  Memory storage for image picture data
- Supervision of the following external statuses:
  Presence of document on hopper
  Presence of document at scanning position
- Send motor control
- Drum motor control
- Modem chip
  Modulation and demodulation for V.34
  Modulation and demodulation for V.33 and V.17
  Modulation and demodulation for V.29 and V.27 ter
  Modulation and demodulation for V.21
  Generation of single-frequency signals for tonal signals
  Detection of single-frequency tonal signals
  Generation of dual time multiple-frequency signals for tone dialing

(3) Operation panel unit: O4W board
- Supervision of switches on operation panel
- Control of LEDs on operation panel
- Control of LCD on operation panel

LED : Light-emitting diode
LCD : Liquid crystal display

(4) NCU board

INU-US	For US and Canada
EN9	For Denmark, Norway, Sweden, Finland, The Netherlands, ireland, portugal, Belgium, Spain, Greece and Other countries, Germany, Switzerland and Austria, France and UK
INU-INT	For New Zealand, Australia and Other countries

- Conversion of receive data and receive signals to internal signal level
- Conversion of send data and send signals to external signal level
- Generation of dial pulses to telephone line
- Detection of ringing signal
- Detection of busy tone (conjunction with Modem unit)
- Detection of hook up signal
- Interface with telephone handset (option)
- Output of send data and send signals to telephone line
- Input of receive data and receive signals from telephone line

(5) Power supply unit: MPW1446 (230V)/MPW1546 (120V), P6L, P2H

- Conversion of main alternating current to the following direct currents:
  +5V DC power supply
  -8V DC power supply
  +24 V DC power supply
  +30 V DC power supply
- Supplying of main alternating current to fuser unit
- Generation of medium voltages +300V, -300V, +400V, -450V and 0V
- Generation of high voltages -1.35 kV, -0.75 kV and +3.5 kV

2. Explanation of Signal Flow

2.1 OKIFAX4550

(1) Copy Mode

Figure A.4 (1/13) shows the picture signal route in local copy mode

One-line picture data is transferred to A/D converter (analog/digital) via operational amplifier from the scanning unit (CIS: contact image sensor) as an analog data. After conversion from analog data to 6-bit digital data by A/D converter, the picture data is sent to IEXSEED (image processing LSI) and SRAM. Here, the picture data undergoes various kinds of picture processings (IEXSEED and SRAM), converted to two-level binary data (black and white) and then sent to IOGA4 (scanning control). The one-line binary picture data from IOGA4 is stored into DRAM. When the data for one page has been stored in the DRAM, the data is read out from the DRAM and sent to IOGA4. The data is converted into a serial data by the picture control of IOGA4 and transferred to the LED print head for printing as HDATA0. Writing of data into the page memory is also possible during the printing operation.

(2) G3 Send Mode

Figure A.4 (2/13) shows the G3 send picture signal route

In the G3 mode, the data transfer route from the scan unit up to the DRAM is the same as in the copy mode described in (1).

The picture data for one-line is transferred from DRAM to IOGA4 (CPU). The IOGA4 (CPU) performs the picture data processing (encode) for this picture data (FILLER, fill bits are inserted etc.) and again stores into the DRAM. The stored encoded data is output from DRAM to the MODEM under the control of IOGA4 (CPU). After modulation, the picture signal “S” is sent to the NCU board as the transmission data. The transmission data “S” goes through the amplifier and is sent to the telephone line L1 and L2 via the transformer T1 as high speed signal.

(3) G3 Receive Mode

Figure A.4 (3/13) shows the G3 receive picture signal route

In the G3 mode, the high-speed picture signal arriving from the telephone line at L1 and L2 of NCU passes through the transformer T1 and the amplifier and is input to the MODEM as “R” signal. After demodulation by modem, the picture data is sent to IOGA4 (CPU). The IOGA4 (CPU) performs the picture data processing (decode) for this picture data and stores into the DRAM. Then, the stored picture data is again written into DRAM (as a page memory) by the picture processing control of IOGA4 (CPU). When the data for one page has been stored in the DRAM, the data is read out from the DRAM and sent to IOGA4. The picture data is converted into a signal data by the printer control of IOGA4 and transferred to the LED print head for printing as HDATA 0.

(4) PC Print

Figure A.4 (4/13) shows the signal route in PC Print mode.

The data input from the MCNT's parallel I/F is input, through the IOGA4, to the DRAM using DMA.
The input data is transferred to the Decoding block in the IOGA4 using DMA.
In the Decoding block, the data is expanded in the 1-line raster buffer in the IOGA4. Then, the expanded data is sent to the video block in the IOGA4 in response to a 1-line synchronous signal.
In the video block, image processing is performed for printing and the resultant data is transferred to the LED head.

(5) PC Scanner

Figure A.4 (5/13) shows the signal route in PC Scanner mode.

The data transfer route from the scan unit up to the DRAM is the same as in the copy mode described in (1).
The data input to the IOGA4 is temporarily written into the external DRAM (4 megawords x 16 bits). The written data is compressed to TIF data by firmware, then written into the external DRAM again.
The written TIF data is sent to the MCNT's parallel I/F through the IOGA4.

(6) PC-FAX TX

Figure A.4 (6/13) shows the signal route in PC-FAX TX mode.

The data encoded and HDLC framed in PC is input to IOGA4 via the parallel I/F to be transferred to the DRAM under the control of DMA.

The stored encoded data is output from DRAM to the MODEM under the control of IOGA4 (CPU). After modulation, the picture signal "S" is sent to the NCU board as the transmission data. The transmission data "S" goes through the amplifier and is sent to the telephone line L1 and L2 via the transformer T1 as high speed signal.

(7) PC-FAX RX

Figure A.4 (7/13) shows the signal route in PC-FAX RX mode.

In the PC-FAX RX mode, the high-speed picture signal arriving from the telephone line at L1 and L2 of NCU passes through the transformer T1 and the amplifier and is input to the MODEM as "R" signal. After demodulation by modem, received binary data is sent from the MODEM to DRAM, under the control of IOGA4 (CPU).

The data written into the DRAM is transferred to the IOGA4 by the DMA to be output to PC via parallel I/F. The PC deframes and decodes the received data to convert it into image data.

(8) ISDN-G3 TX mode

Figure A.4 (8/13) shows the signal route of this mode.

The signal route from the image sensor to the I-Exseed, DRAM, IOGA4(CPU), and MODEM is the same as that of the item (2), “G3 send mode”. The analog signal “S” encoded and modulated in the MODEM is sent to the G4N board as the send signal. The analog signal is converted into the digital signal by the PCM codec on the G4N board to be sent to an ISDN line.

(9) ISDN-G3 RX mode

Figure A.4 (9/13) shows the signal route of this mode.

The high-speed digital image signal received from an ISDN line is converted to analog signal by the PCM Codec on the G4N board. The converted analog signal is then input to the modem on the MCNT as “R” signal. The signal route from the modem to the LED head is the same as that of the item (3) “G3 receive mode”.

The signal demodulated by the modem is decoded by the IOGA4 (CPU) and stored into the DRAM. The signal is then converted into print data by the IOGA4 (printer control) to be transferred to the LED head as HDATA0.

(10) ISDN PC-FAX G3 TX mode

Figure A.4 (10/13) shows the signal route of this mode.

The signal route from the PC to the modem is the same as that described in item (6) “PC-FAX TX”. The data encoded and HDLC framed in the PC is transferred to the DRAM via the parallel I/F, IOGA4, and DMA. The signal is then transferred to the modem by the IOGA4(CPU).

The modulated analog signal “S” is sent to the G4N board, where the signal is converted into digital signal to be output to an ISDN line.

(11) ISDN PC-FAX G3 RX MODE

Figure A.4 (11/13) shows the signal route of this mode.

The high-speed digital image signal received from an ISDN line is converted to analog signal by the PCM Codec on the G4N board. The converted analog signal is then input to the modem on the MCNT as “R” signal. The signal route from the modem to PC is the same as that of the item (7) “PC-FAX RX”.

The received binary data demodulated by the modem is sent to the DRAM via the IOGA4(CPU) and transferred to the IOGA4 by the DMA to be output to the PC via parallel I/F. The PC deframes and decodes the received data to convert it into image data.

(12) G4 TX mode

Figure A.4 (12/13) shows the signal route of this mode.

The signal route from the image sensor to the I-Exseed, DRAM, IOGA4(CPU), and DRAM is the same as that of the item (2), “G3 send mode”.

The read one-line image data is stored in the DRAM, encoded by the IOGA4(CPU) and again stored in the DRAM.

In G4 TX mode the encoded data is transferred by the control of IOGA4(CPU) to the dual-port RAM(DPRAM) on the G4N board. The transferred data is sent to a line via the ISDN controller and ISDN driver by the control of the CPU on the G4N board.

(13) G4 RX mode

Figure A.4 (13/13) shows the signal route of this mode.

The signal received from an ISDN line is transferred to the dual-port RAM (DPRAM) by the control of the CPU via the ISDN driver and ISDN controller of the G4N board.

Notified of the existence of received G4 data by interruption, the IOGA4 (CPU) of the 46F board transfers the data from the DPRAM to the DRAM.

The signal route from the DRAM to the LED head is the same as that of item (3) “G3 receive mode”.

The IOGA4 (CPU) reads out the data stored in the DRAM and decodes it to store it again in the DRAM. The data is transferred to the IOGA4 (printer control) by the DMA, converted into image data, and transferred to the LED head for printing.

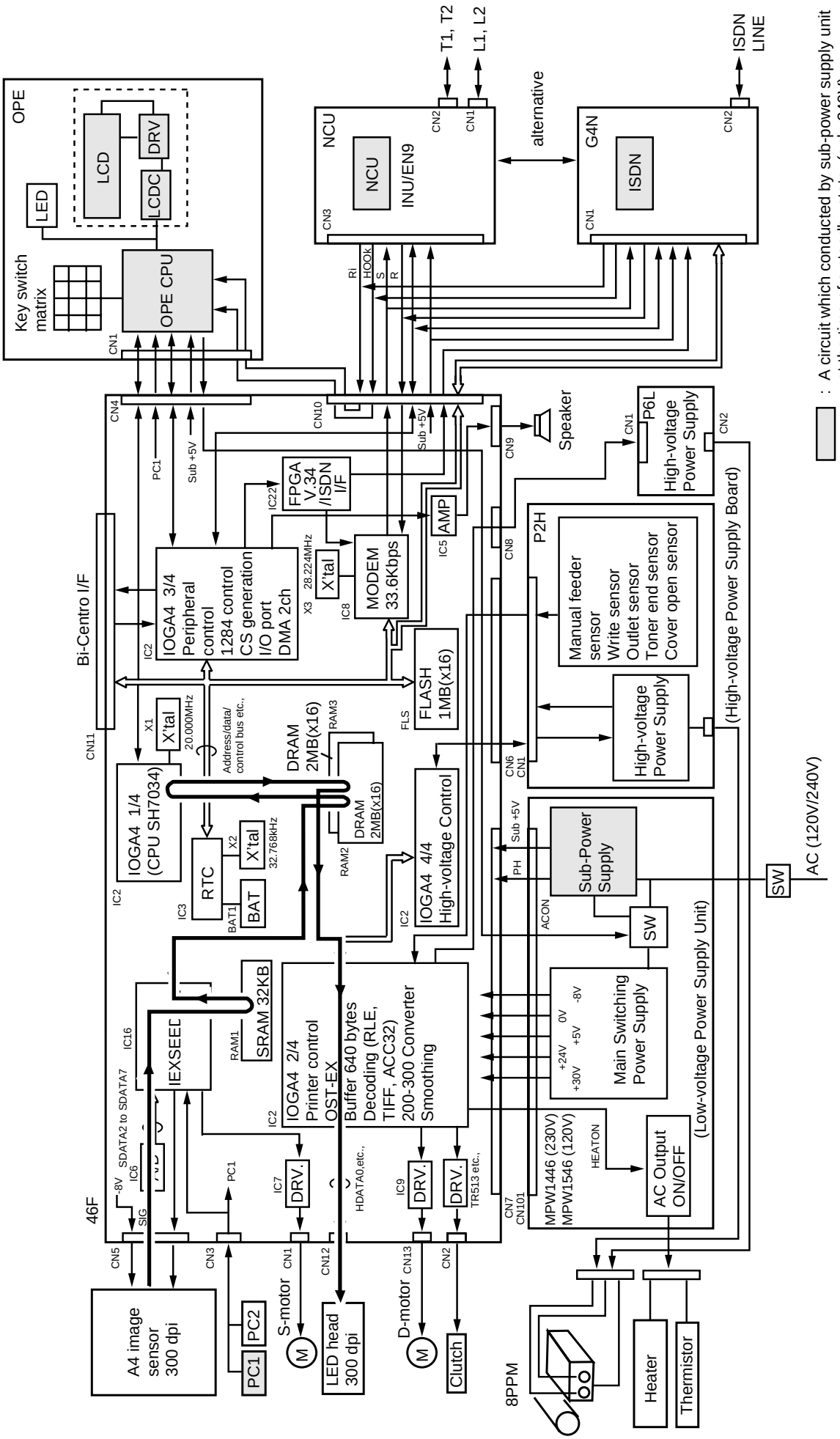


Figure A.4 (1/13) Copy Picture Signal (OKIFAX4550)

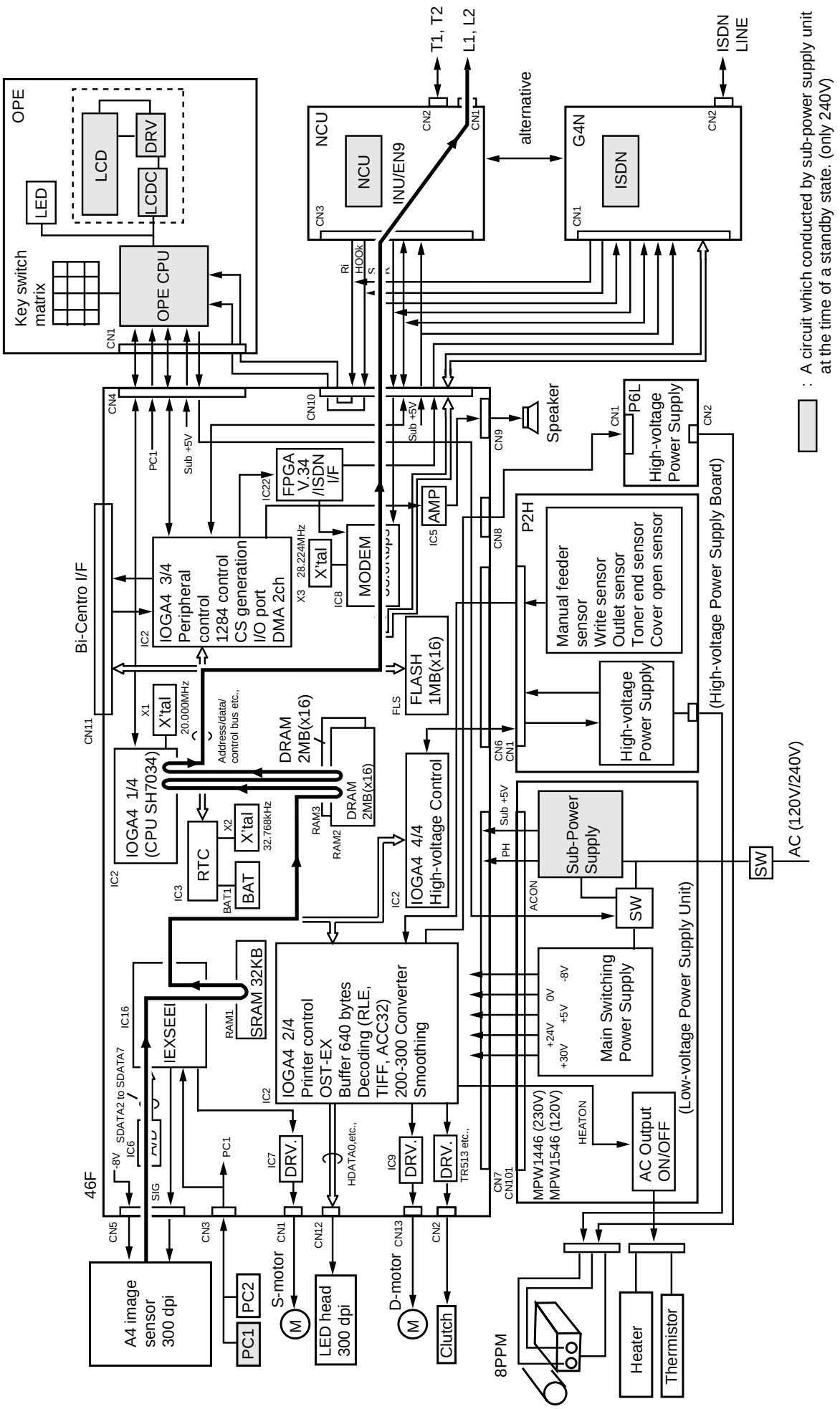


Figure A.4 (2/13) G3 Send Picture Signal (OKIFAX4550)

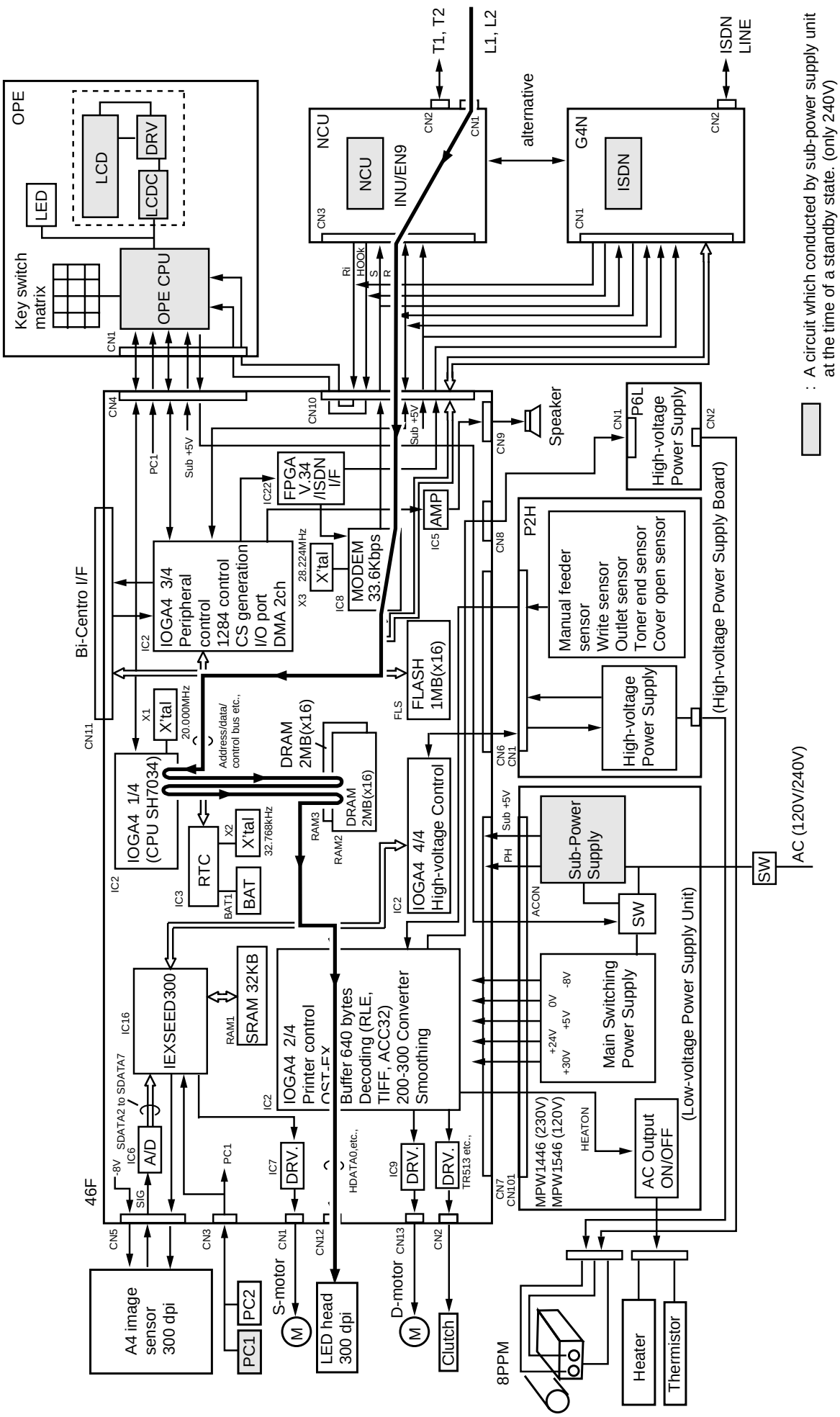


Figure A.4 (3/13) G3 Receive Picture Signal (OKIFAX4550)

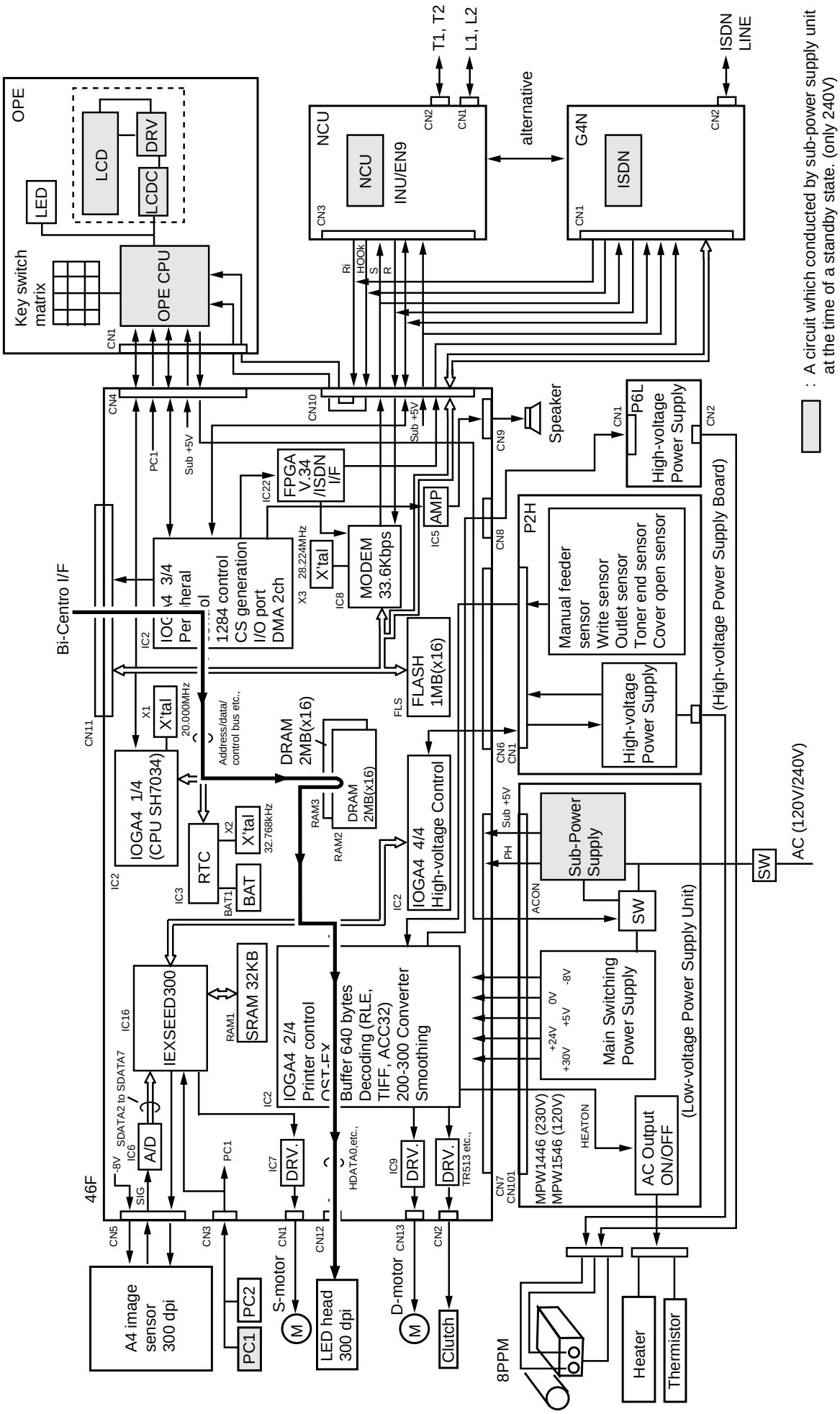


Figure A.4 (4/13) PC Print (OKIFAX4550)

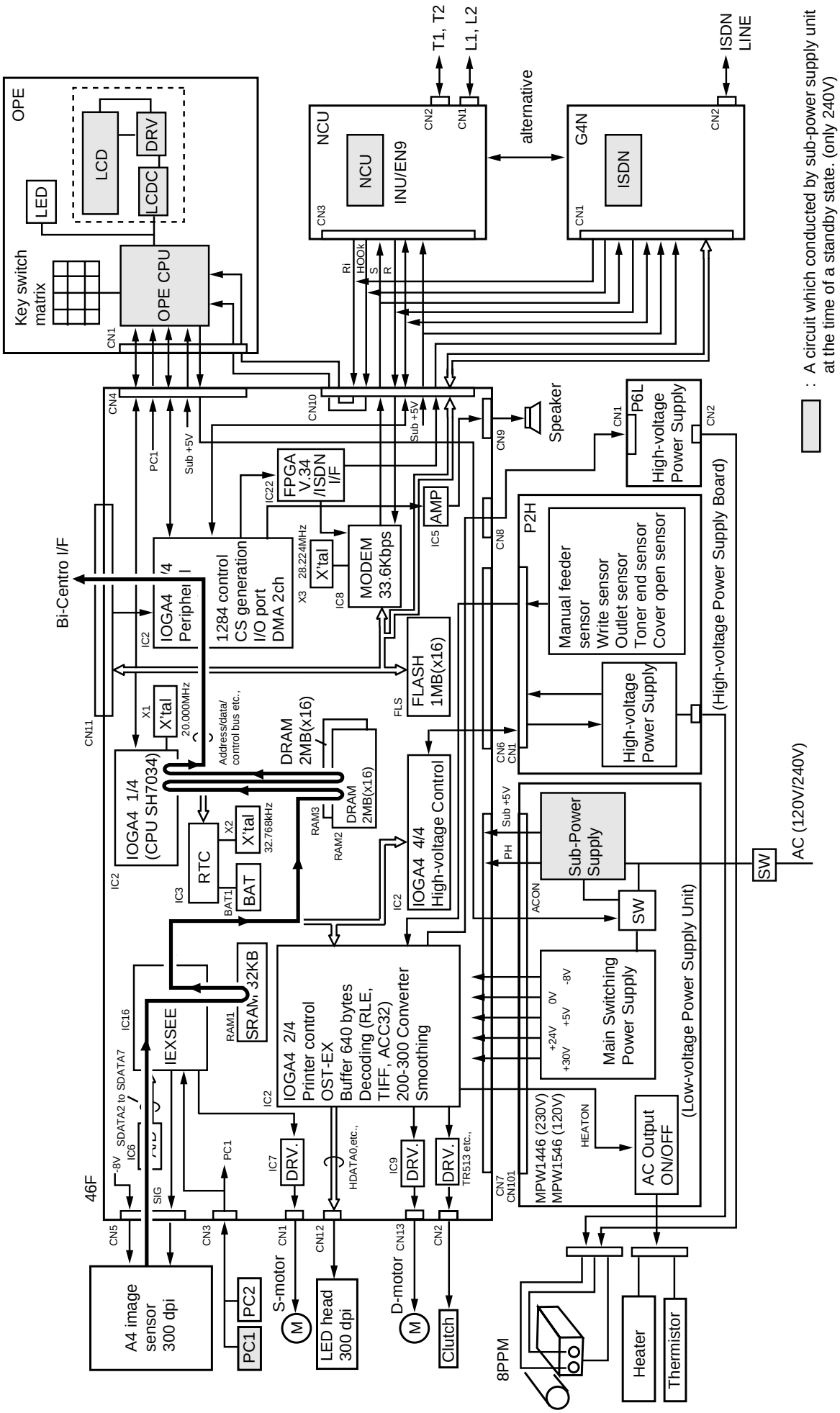


Figure A.4 (5/13) PC Scanner (OKIFAX4550)

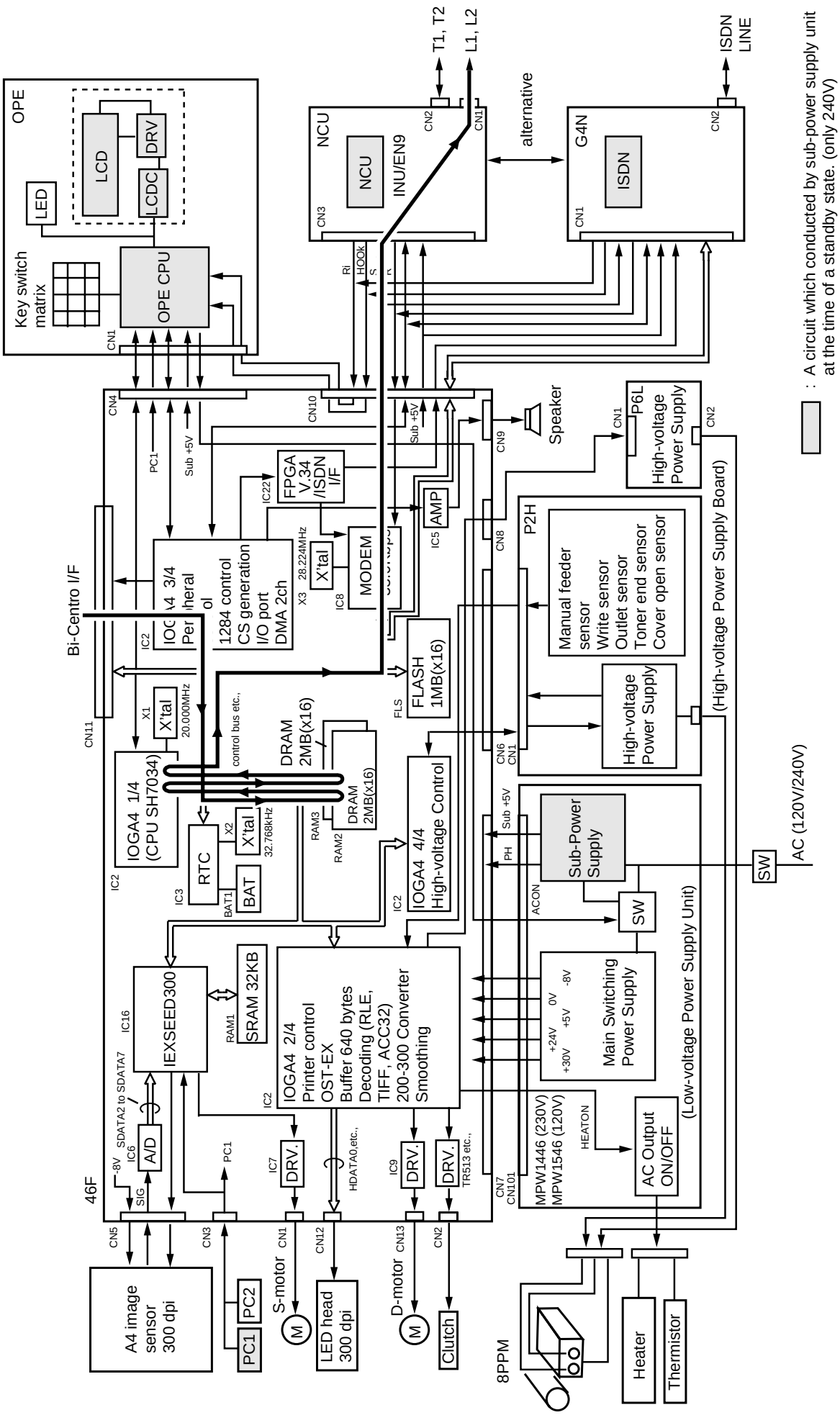


Figure A.4 (6/13) PC-FAX TX (OKIFAX4550)

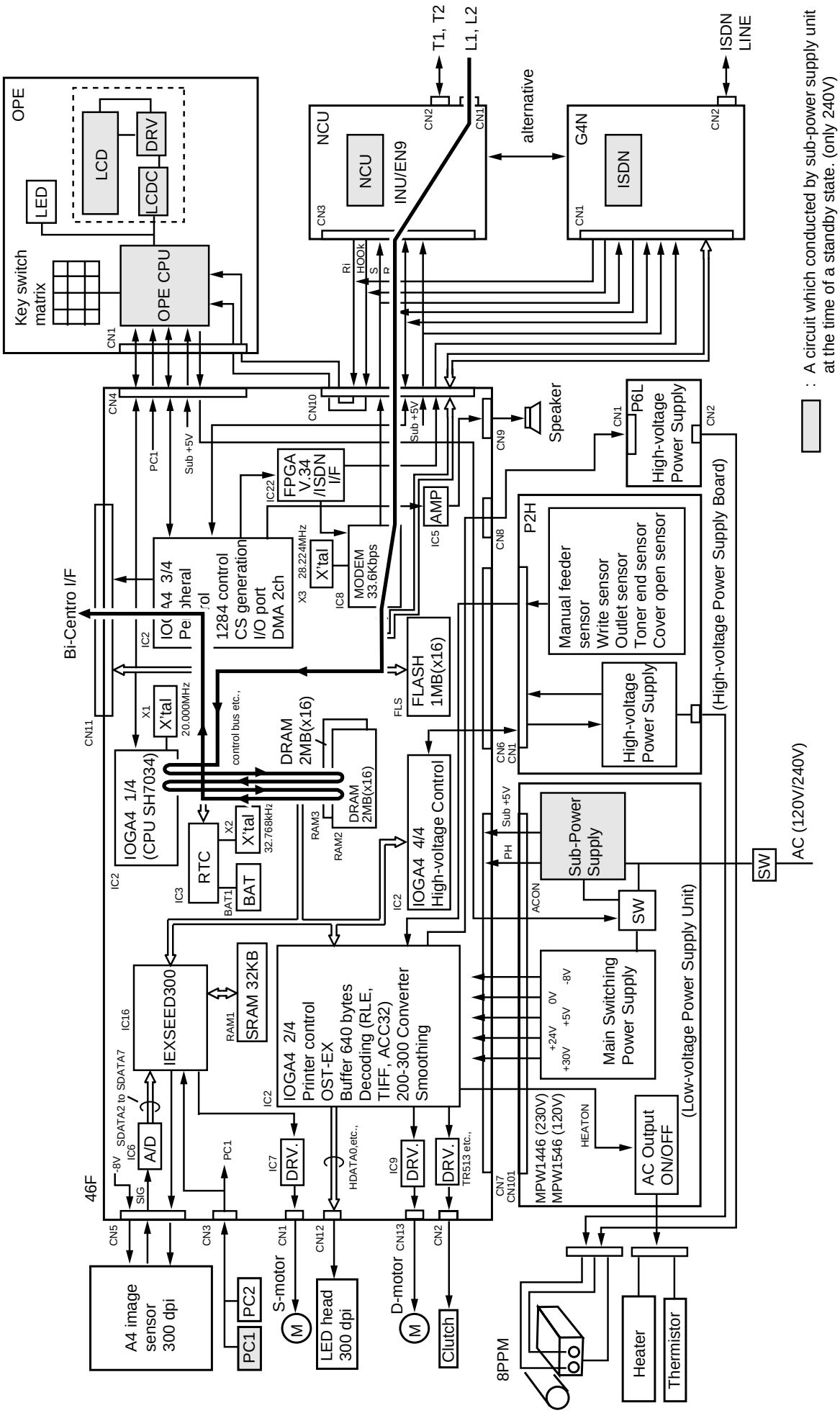


Figure A.4 (7/13) PC FAX RX (OKIFAX4550)

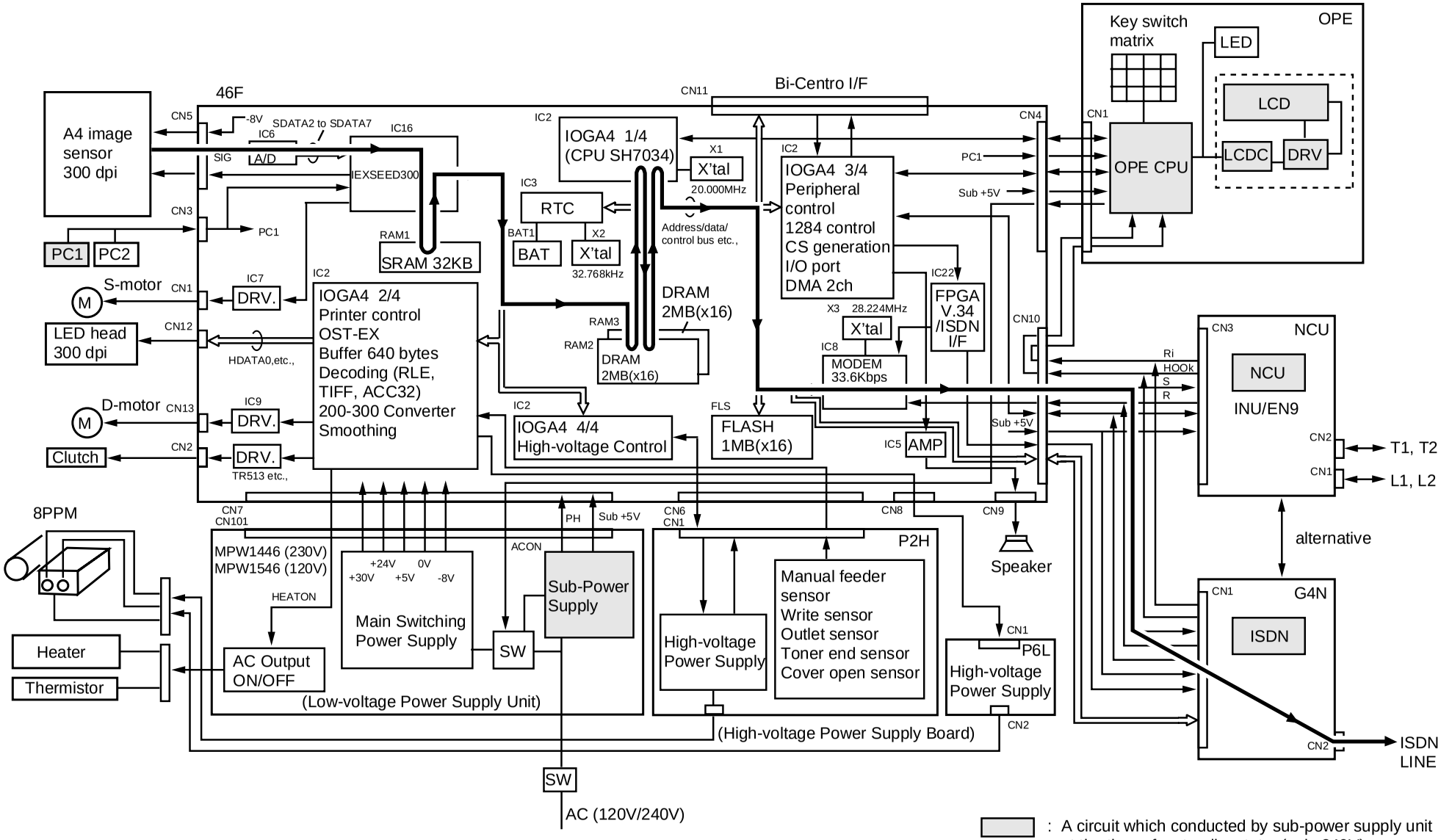


Figure A.4 (8/13) ISDN-G3 TX (OKIFAX4550)

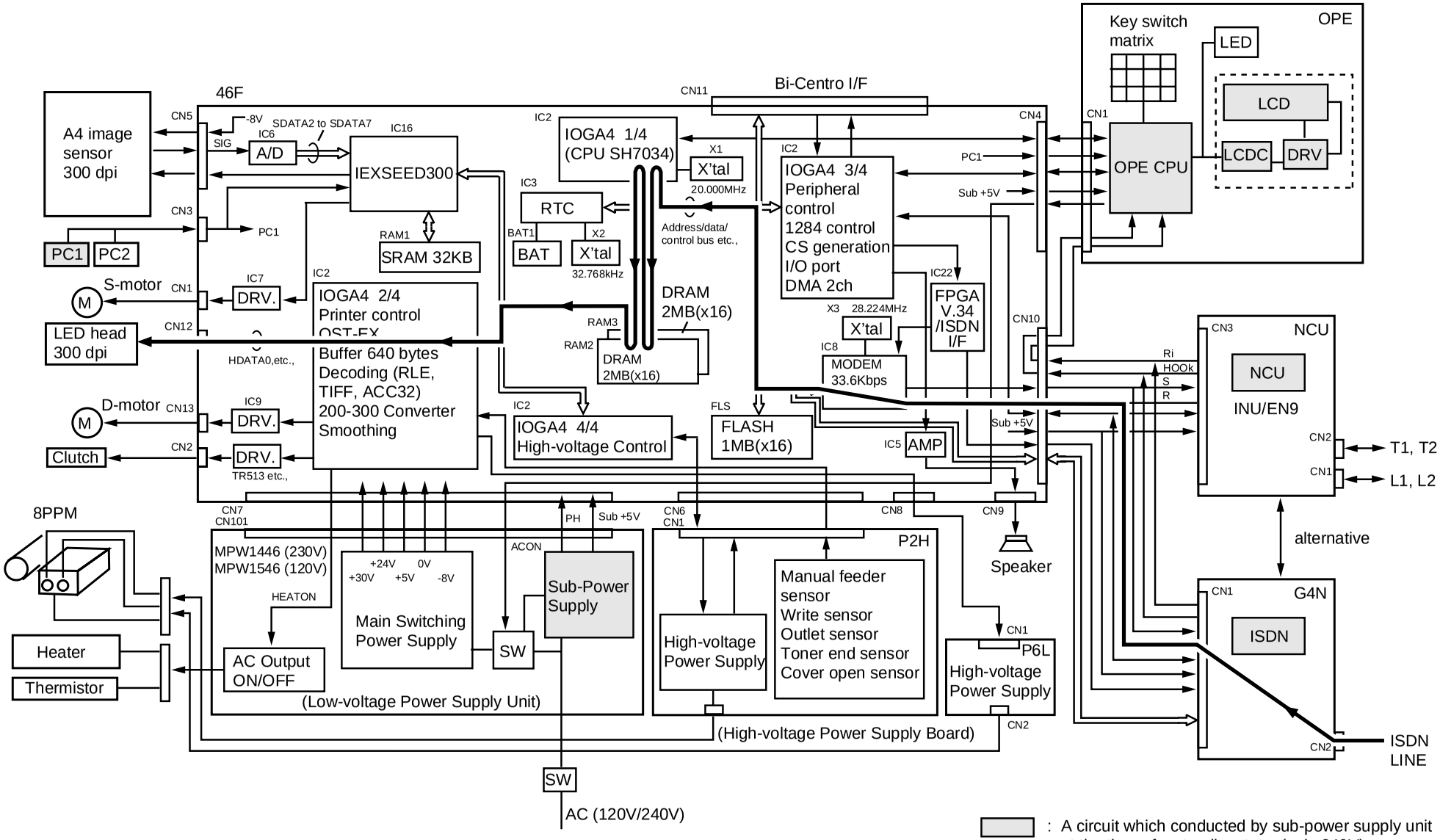


Figure A.4 (9/13) ISDN-G3 RX (OKIFAX4550)

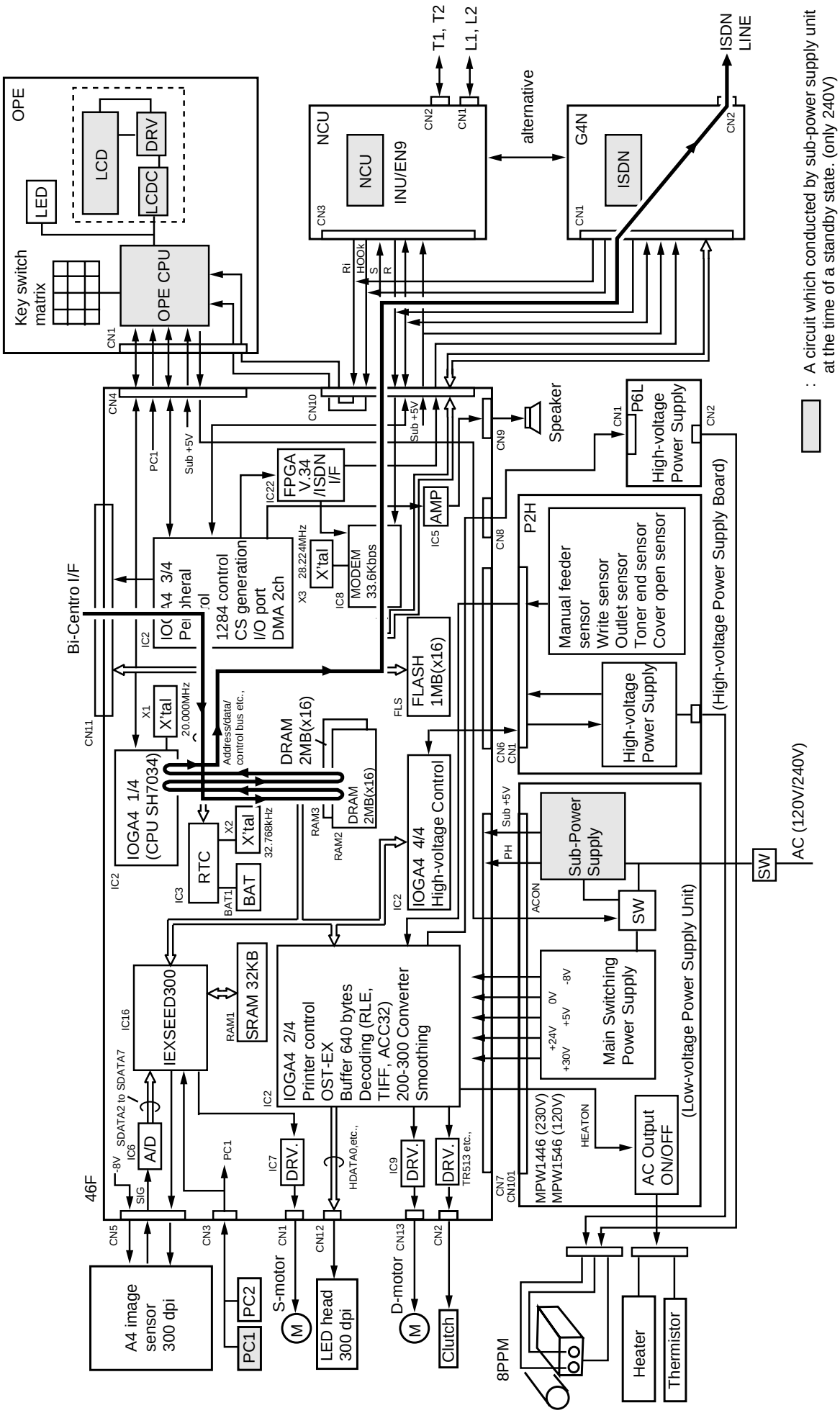


Figure A.4 (10/13) ISDN PC-FAX G3 TX (OKIFAX4550)

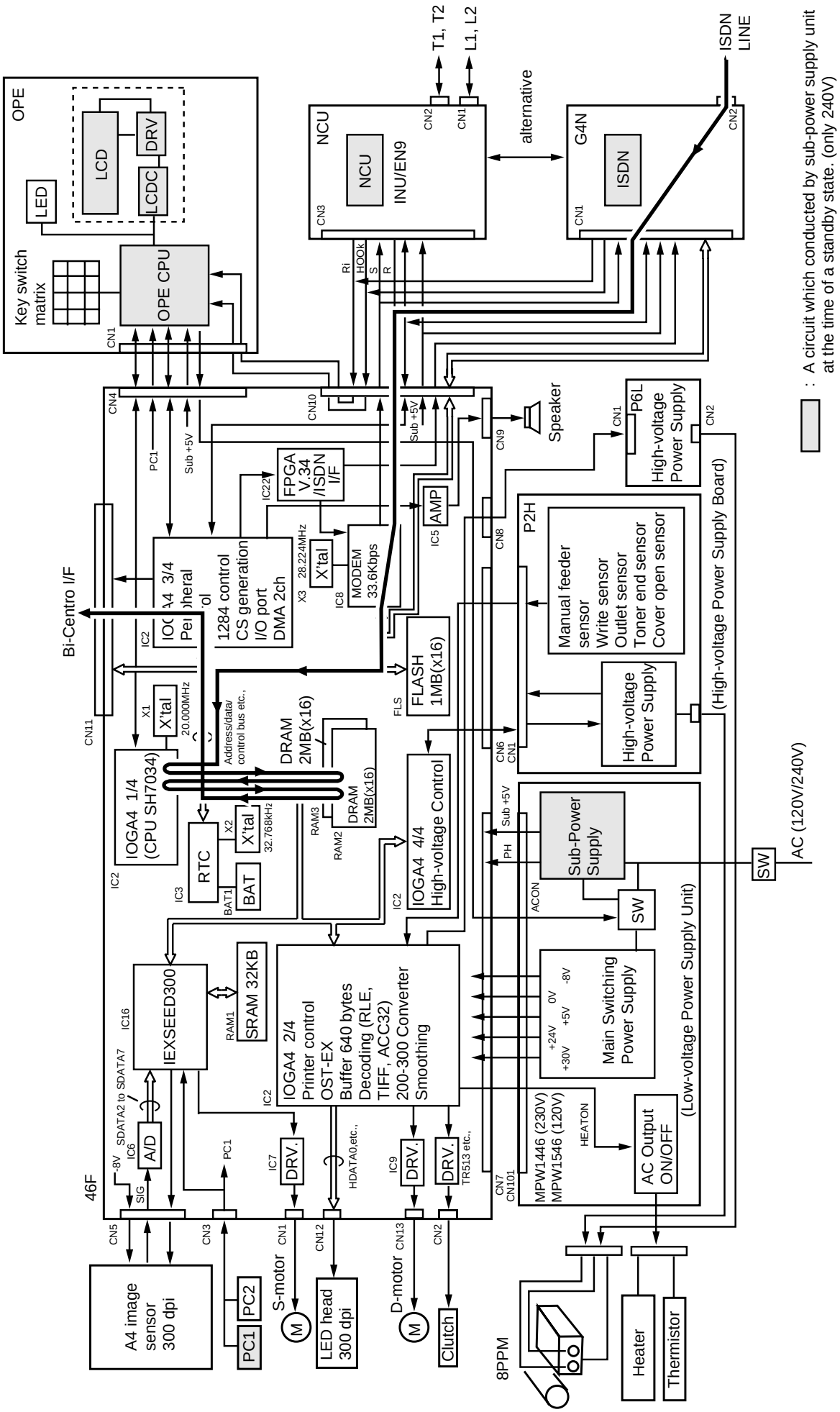


Figure A.4 (11/13) ISDN PC-FAX G3 RX (OKIFAX4550)

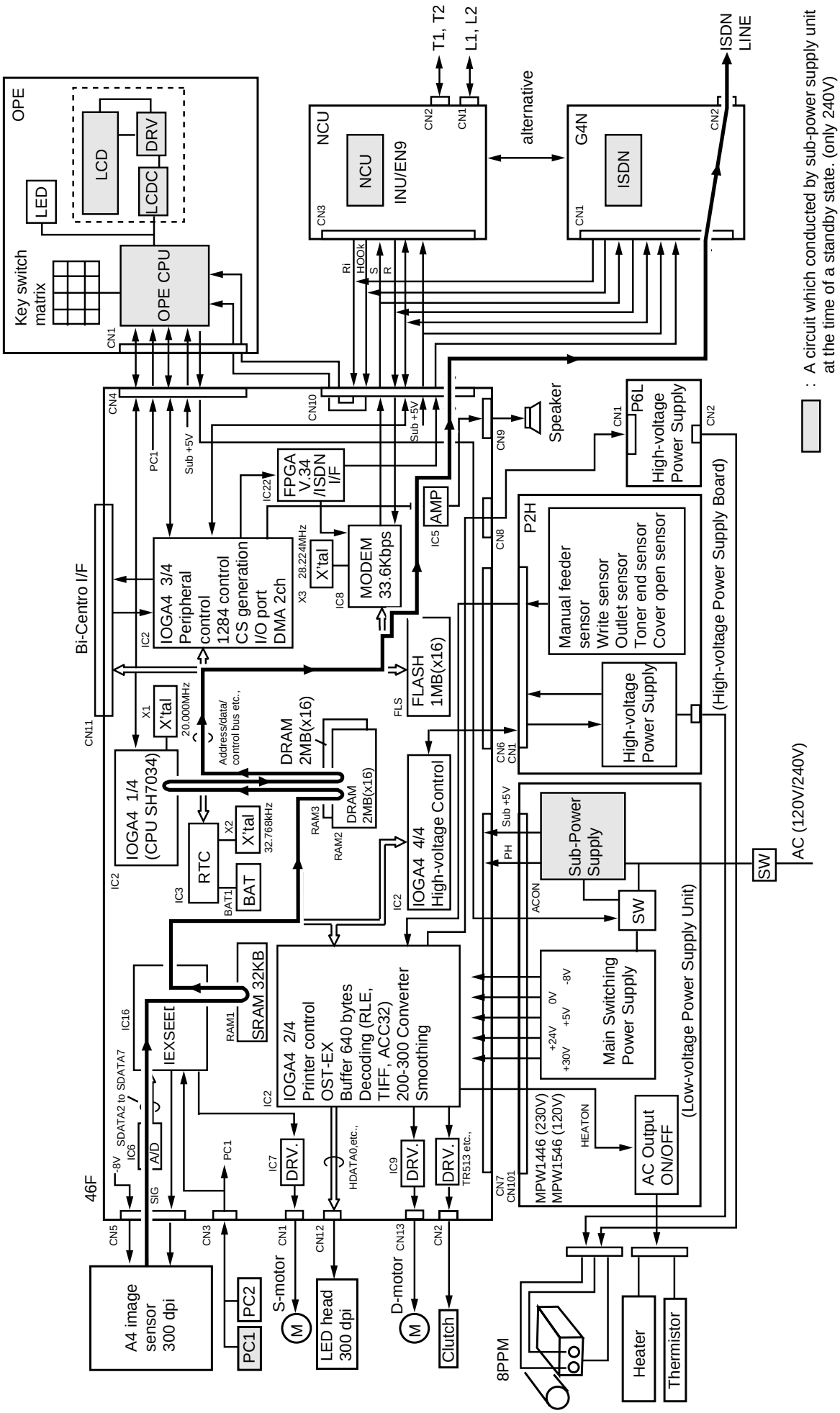


Figure A.4 (12/13) G4 TX (OKIFAX4550)

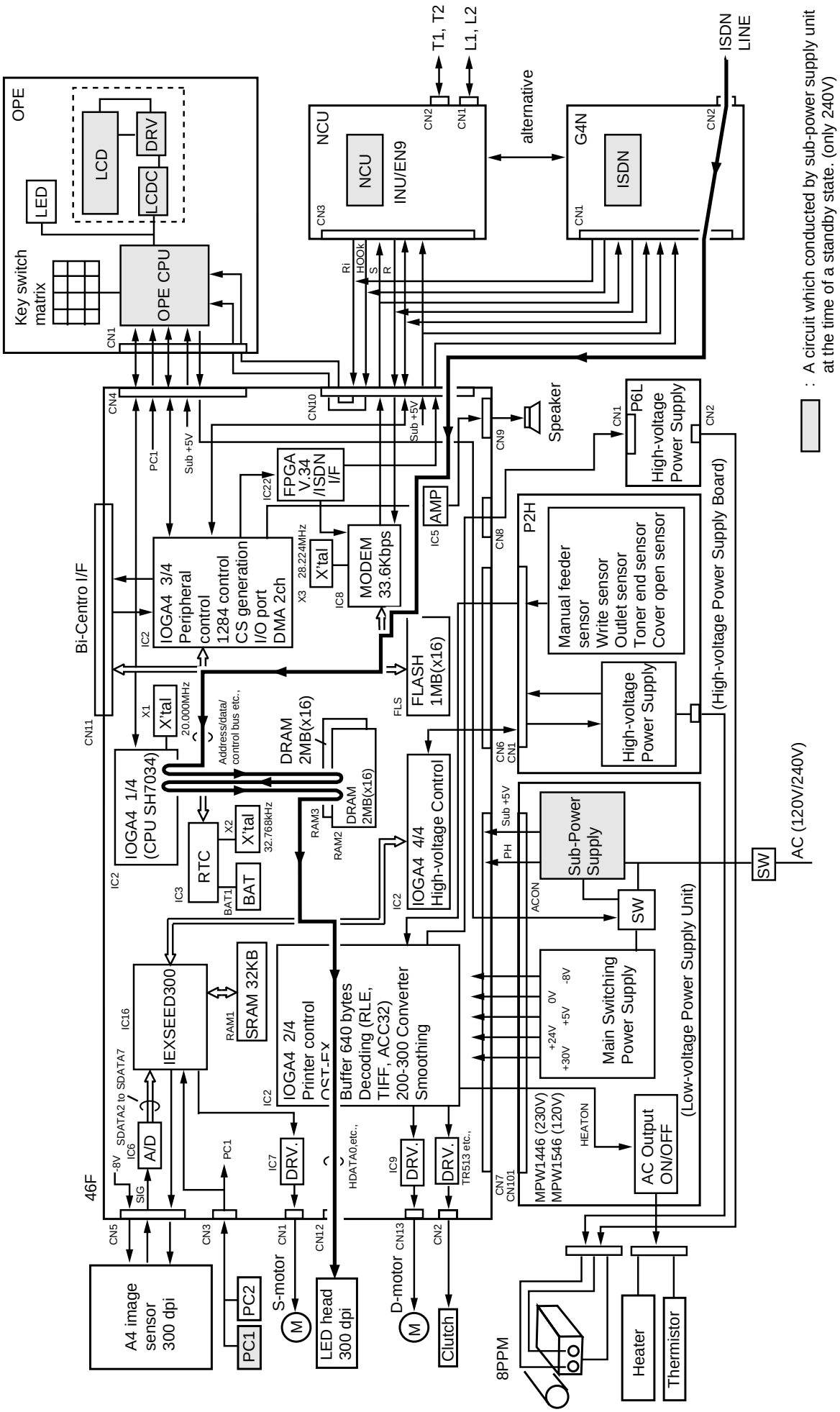


Figure A.4 (13/13) G4 RX (OKIFAX4550)

2.2 OKIOFFICE87

(1) Copy Mode

Figure A.5 (1/13) shows the picture signal route in local copy mode

One-line picture data is transferred to operational amplifier from the scanning unit (CIS: contact image sensor) as an analog data. The picture data is sent to LC821033 (image processing LSI). Here, the picture data undergoes various kinds of picture processings (LC821033), converted to two-level binary data (black and white) and then sent to IOGA6 (scanning control). The one-line binary picture data from IOGA6 is stored into DRAM. When the data for one page has been stored in the DRAM, the data is read out from the DRAM and sent to IOGA6. The data is converted into a serial data by the picture control of IOGA6 and transferred to the LED print head for printing as HDATA3~0. Writing of data into the page memory is also possible during the printing operation.

(2) G3 Send Mode

Figure A.5 (2/13) shows the G3 send picture signal route

In the G3 mode, the data transfer route from the scan unit up to the DRAM is the same as in the copy mode described in (1).

The picture data for one-line is transferred from DRAM to CPU. The CPU performs the picture data processing (encode) for this picture data (FILLER, fill bits are inserted etc.) and again stores into the DRAM. The stored encoded data is output from DRAM to the MODEM under the control of CPU. After modulation, the picture signal “S” is sent to the NCU board as the transmission data. The transmission data “S” goes through the amplifier and is sent to the telephone line L1 and L2 via the transformer T1 as high speed signal.

(3) G3 Receive Mode

Figure A.5 (3/13) shows the G3 receive picture signal route

In the G3 mode, the high-speed picture signal arriving from the telephone line at L1 and L2 of NCU passes through the transformer T1 and the amplifier and is input to the MODEM as “R” signal. After demodulation by modem, the picture data is sent to CPU. The CPU performs the picture data processing (decode) for this picture data and stores into the DRAM. Then, the stored picture data is again written into DRAM (as a page memory) by the picture processing control of IOGA6. When the data for one page has been stored in the DRAM, the data is read out from the DRAM and sent to IOGA6. The picture data is converted into a signal data by the printer control of IOGA6 and transferred to the LED print head for printing as HDATA3~0.

(4) PC Print

Figure A.5 (4/13) shows the signal route in PC Print mode.

The data input from the R46's parallel I/F is input, through the LVC161284 and IOGA6, to the DRAM using DMA.

The input data is transferred to the Decoding block in the IOGA6 using DMA.

In the Decoding block, the data is expanded in the 1-line raster buffer in the IOGA6. Then, the expanded data is sent to the video block in the IOGA6 in response to a 1-line synchronous signal. In the video block, image processing is performed for printing and the resultant data is transferred to the LED head.

(5) PC Scanner

Figure A.5 (5/13) shows the signal route in PC Scanner mode.

The data transfer route from the scan unit up to the DRAM is the same as in the copy mode described in (1).

The data input to the IOGA6 is temporarily written into the external DRAM (4 megawords x 16 bits). The written data is compressed to TIF data by firmware, then written into the external DRAM again.

The written TIF data is sent to the R46's parallel I/F through the LVC161284 and IOGA6.

(6) PC-FAX TX

Figure A.5 (6/13) shows the signal route in PC-FAX TX mode.

The data encoded and HDLC framed in PC is input to LVC161284 and IOGA6 via the parallel I/F to be transferred to the DRAM under the control of DMA.

The stored encoded data is output from DRAM to the MODEM under the control of CPU. After modulation, the picture signal "S" is sent to the NCU board as the transmission data. The transmission data "S" goes through the amplifier and is sent to the telephone line L1 and L2 via the transformer T1 as high speed signal.

(7) PC-FAX RX

Figure A.5 (7/13) shows the signal route in PC-FAX RX mode.

In the PC-FAX RX mode, the high-speed picture signal arriving from the telephone line at L1 and L2 of NCU passes through the transformer T1 and the amplifier and is input to the MODEM as "R" signal. After demodulation by modem, received binary data is sent from the MODEM to DRAM, under the control of CPU.

The data written into the DRAM is transferred to the LVC161284 and IOGA6 by the DMA to be output to PC via parallel I/F. The PC deframes and decodes the received data to convert it into image data.

(8) ISDN-G3 TX mode

Figure A.5 (8/13) shows the signal route of this mode.

The signal route from the image sensor to the LC821033, DRAM, CPU, IOGA6 and MODEM is the same as that of the item (2), “G3 send mode”. The analog signal “S” encoded and modulated in the MODEM is sent to the G4N board as the send signal. The analog signal is converted into the digital signal by the PCM codec on the G4N board to be sent to an ISDN line.

(9) ISDN-G3 RX mode

Figure A.5 (9/13) shows the signal route of this mode.

The high-speed digital image signal received from an ISDN line is converted to analog signal by the PCM Codec on the G4N board. The converted analog signal is then input to the modem on the MCNT as “R” signal. The signal route from the modem to the LED head is the same as that of the item (3) “G3 receive mode”.

The signal demodulated by the modem is decoded by the CPU and stored into the DRAM. The signal is then converted into print data by the IOGA6 (printer control) to be transferred to the LED head as HDATA3~0.

(10) ISDN PC-FAX G3 TX mode

Figure A.5 (10/13) shows the signal route of this mode.

The signal route from the PC to the modem is the same as that described in item (6) “PC-FAX TX”. The data encoded and HDLC framed in the PC is transferred to the DRAM via the parallel I/F, LVC161284, IOGA6 and DMA. The signal is then transferred to the modem by the CPU.

The modulated analog signal “S” is sent to the G4N board, where the signal is converted into digital signal to be output to an ISDN line.

(11) ISDN PC-FAX G3 RX MODE

Figure A.5 (11/13) shows the signal route of this mode.

The high-speed digital image signal received from an ISDN line is converted to analog signal by the PCM Codec on the G4N board. The converted analog signal is then input to the modem on the MCNT as “R” signal. The signal route from the modem to PC is the same as that of the item (7) “PC-FAX RX”.

The received binary data demodulated by the modem is sent to the DRAM via the CPU and transferred to the IOGA6 by the DMA to be output to the PC via parallel I/F. The PC deframes and decodes the received data to convert it into image data.

(12) G4 TX mode

Figure A.5 (12/13) shows the signal route of this mode.

The signal route from the image sensor to the LC821033, DRAM, IOGA6, CPU, and DRAM is the same as that of the item (2), “G3 send mode”.

The read one-line image data is stored in the DRAM, encoded by the CPU and again stored in the DRAM.

In G4 TX mode the encoded data is transferred by the control of CPU to the dual-port RAM(DPRAM) on the G4N board. The transferred data is sent to a line via the ISDN controller and ISDN driver by the control of the CPU on the G4N board.

(13) G4 RX mode

Figure A.5 (13/13) shows the signal route of this mode.

The signal received from an ISDN line is transferred to the dual-port RAM (DPRAM) by the control of the CPU via the ISDN driver and ISDN controller of the G4N board.

Notified of the existence of received G4 data by interruption, the CPU of the R46 board transfers the data from the DPRAM to the DRAM.

The signal route from the DRAM to the LED head is the same as that of item (3) “G3 receive mode”.

The CPU reads out the data stored in the DRAM and decodes it to store it again in the DRAM.

The data is transferred to the IOGA6 (printer control) by the DMA, converted into image data, and transferred to the LED head for printing.

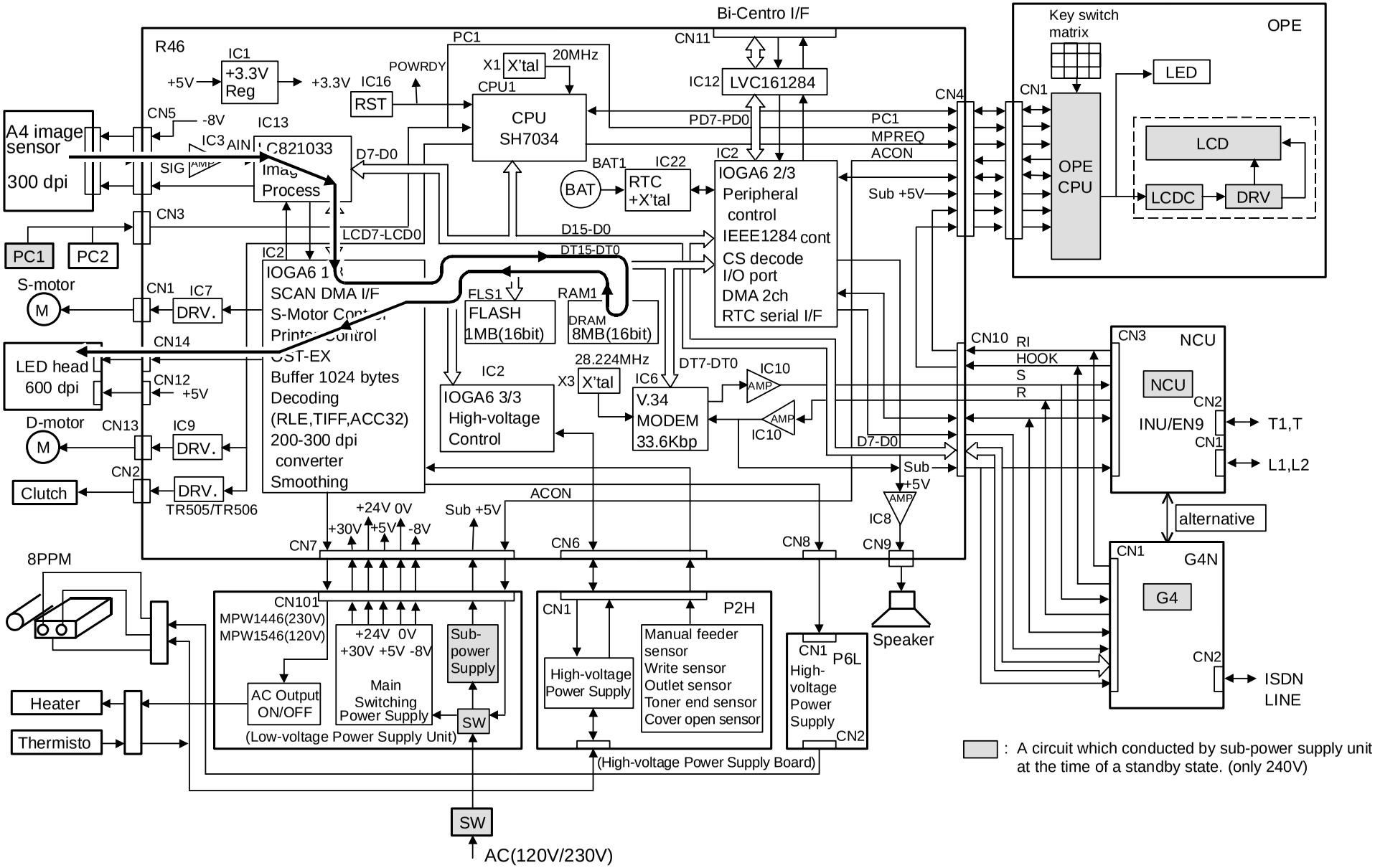


Figure A.5 (1/13) Copy Picture Signal (OKIOFFICE87)

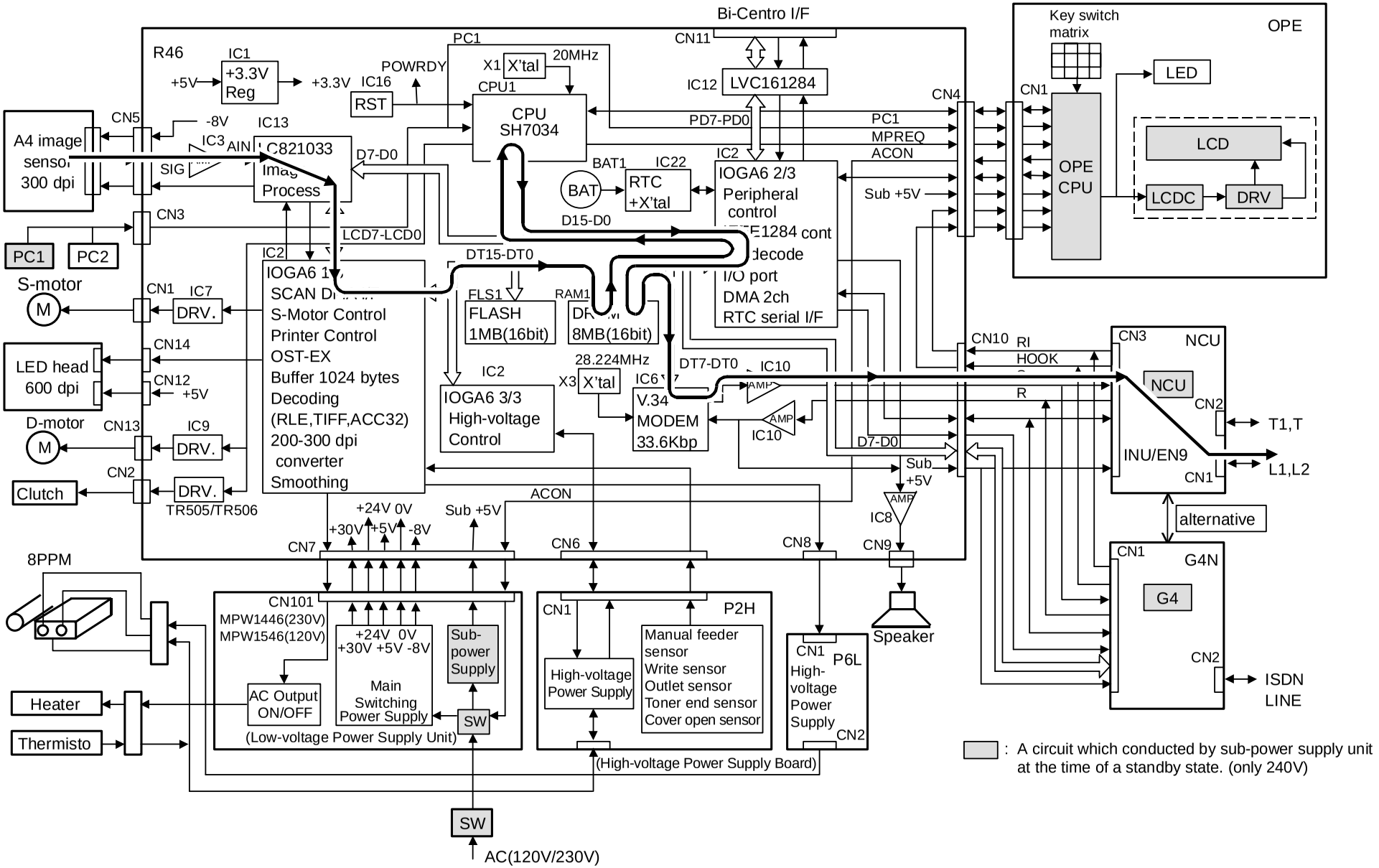


Figure A.5 (2/13) G3 Send Picture Signal (OKIOFFICE87)

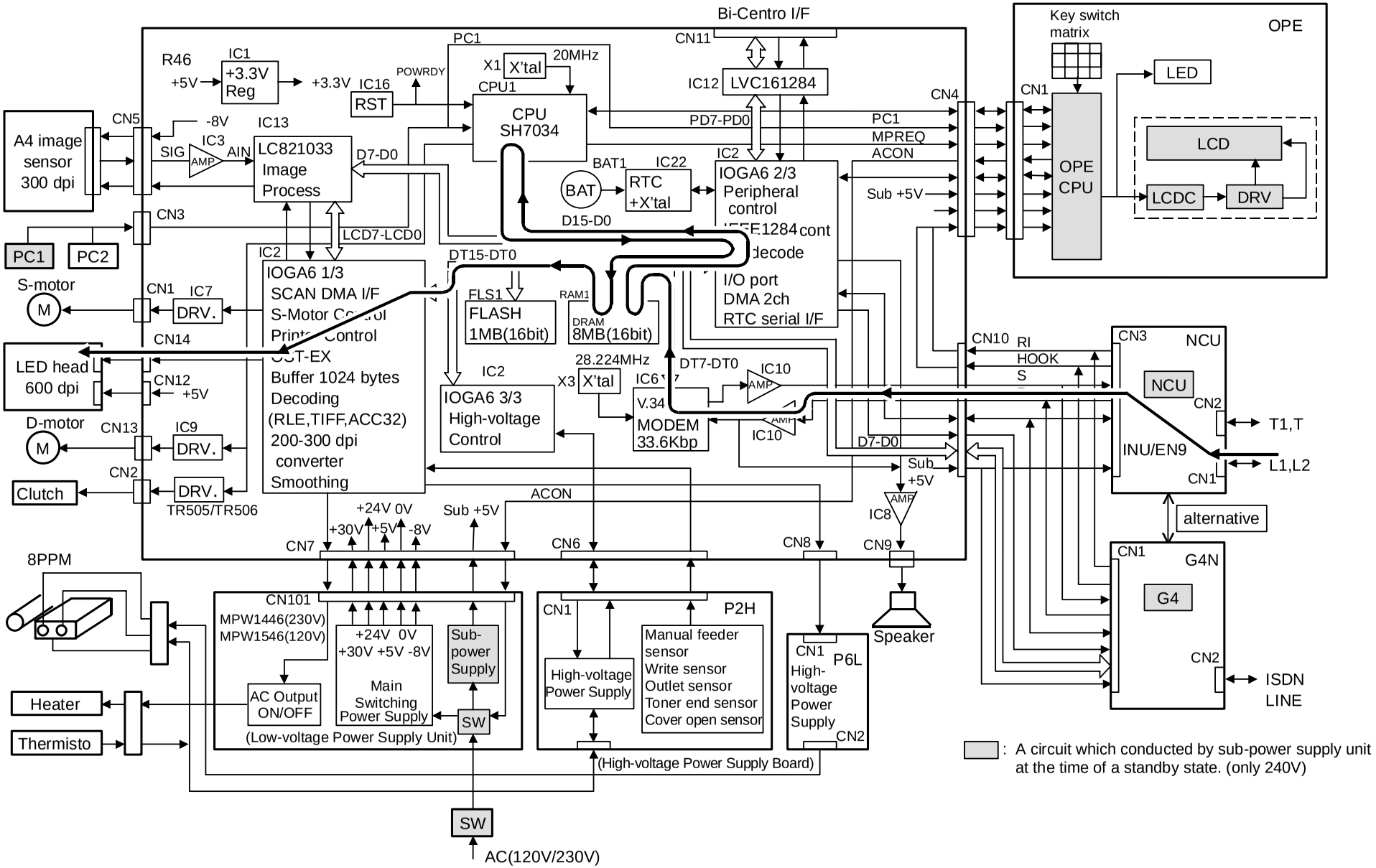


Figure A.5 (3/13) G3 Receive Picture Signal (OKIOFFICE87)

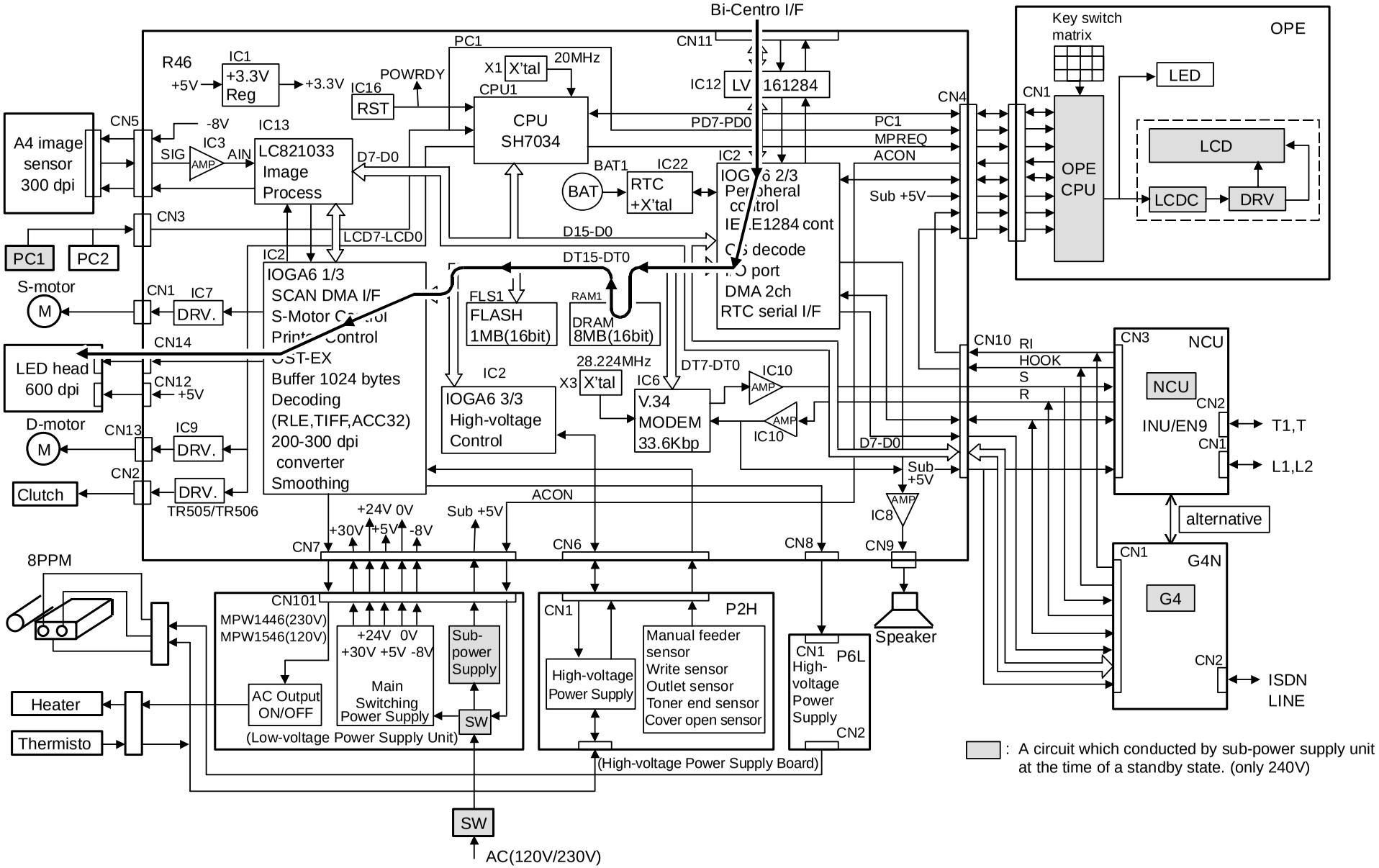


Figure A.5 (4/13) PC Print Picture Signal (OKIOFFICE87)

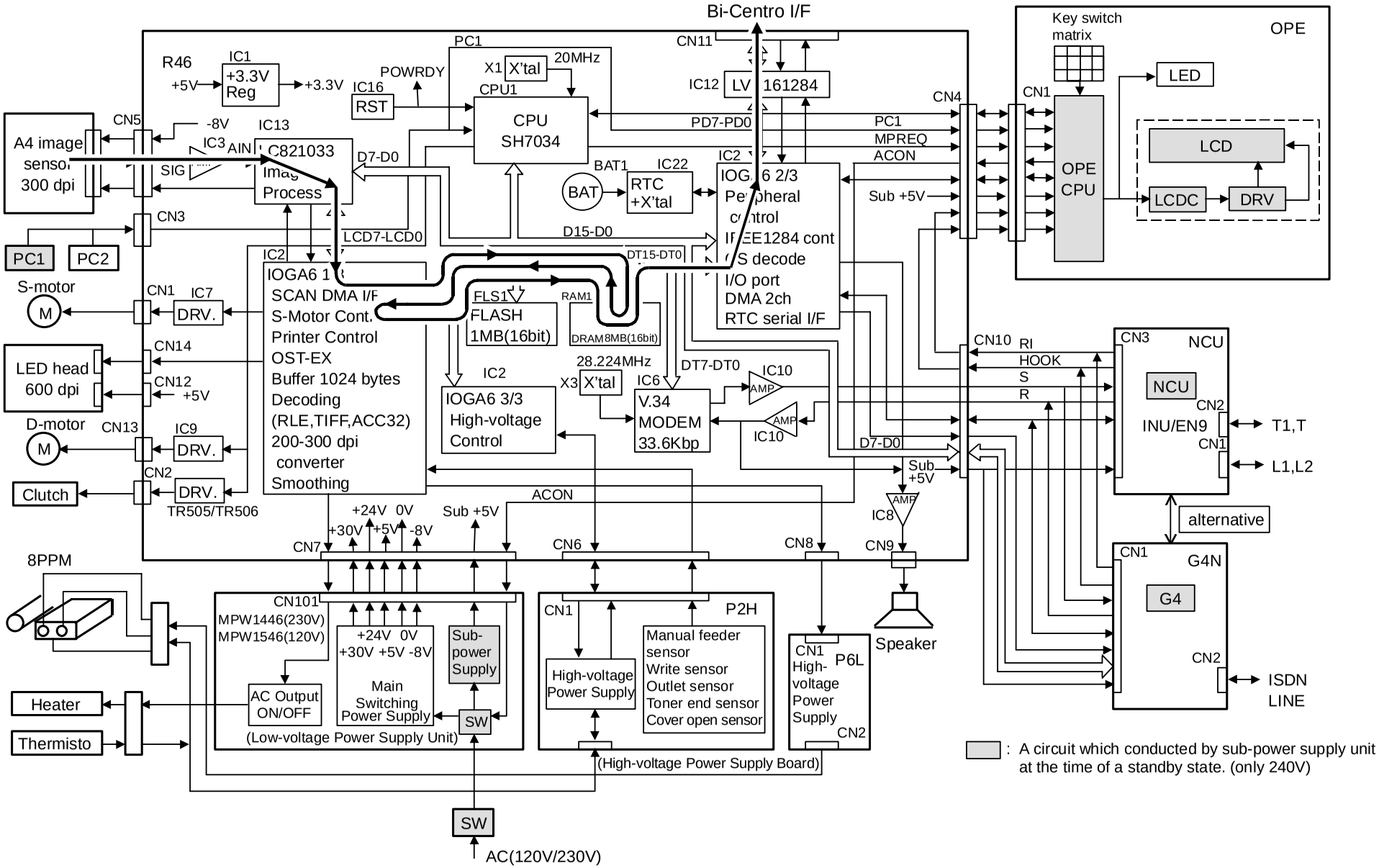


Figure A.5 (5/13) PC Scanner Picture Signal (OKIOFFICE87)

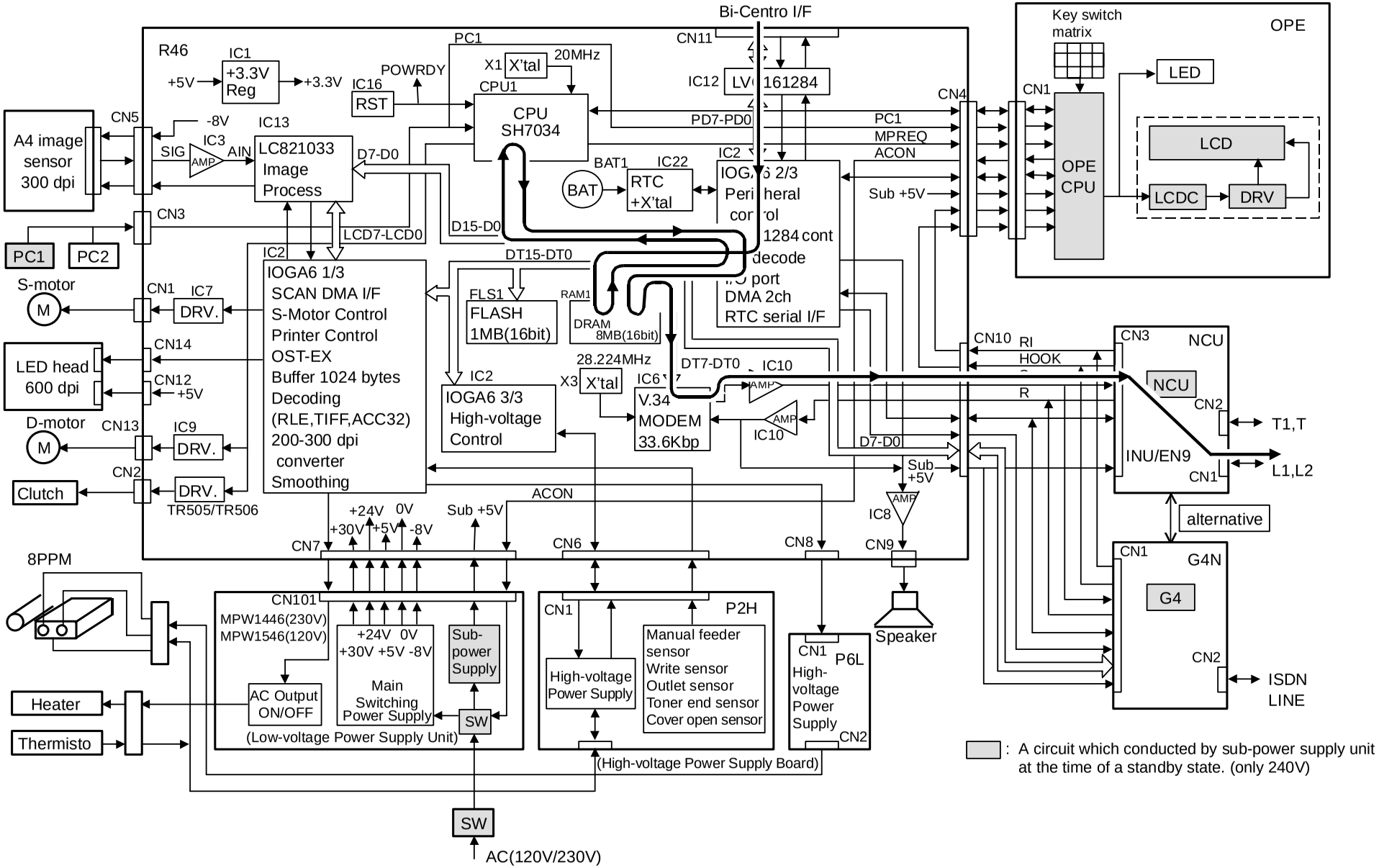


Figure A.5 (6/13) PC FAX TX Picture Signal (OKIOFFICE87)

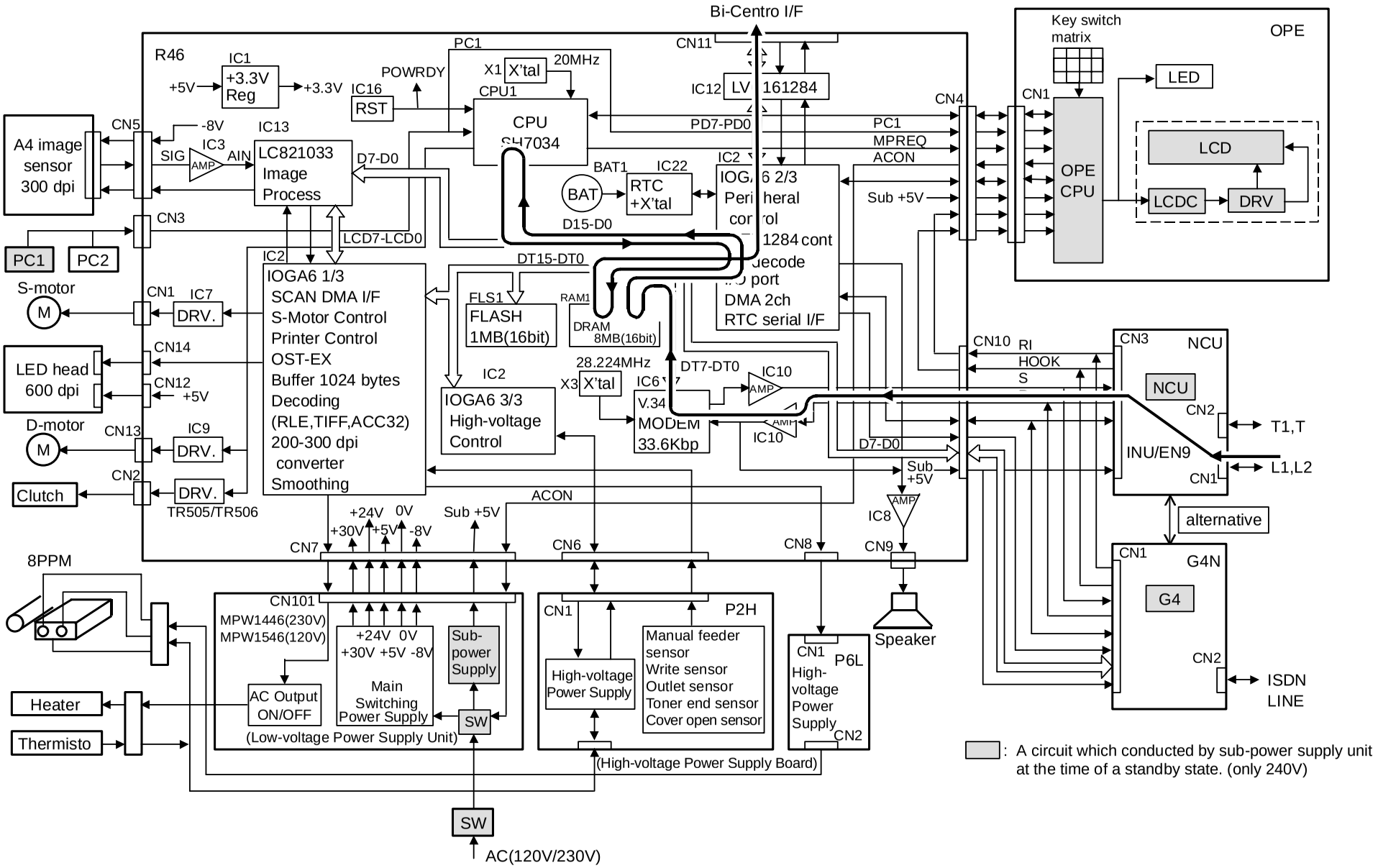


Figure A.5 (7/13) PC FAX RX Picture Signal (OKIOFFICE87)

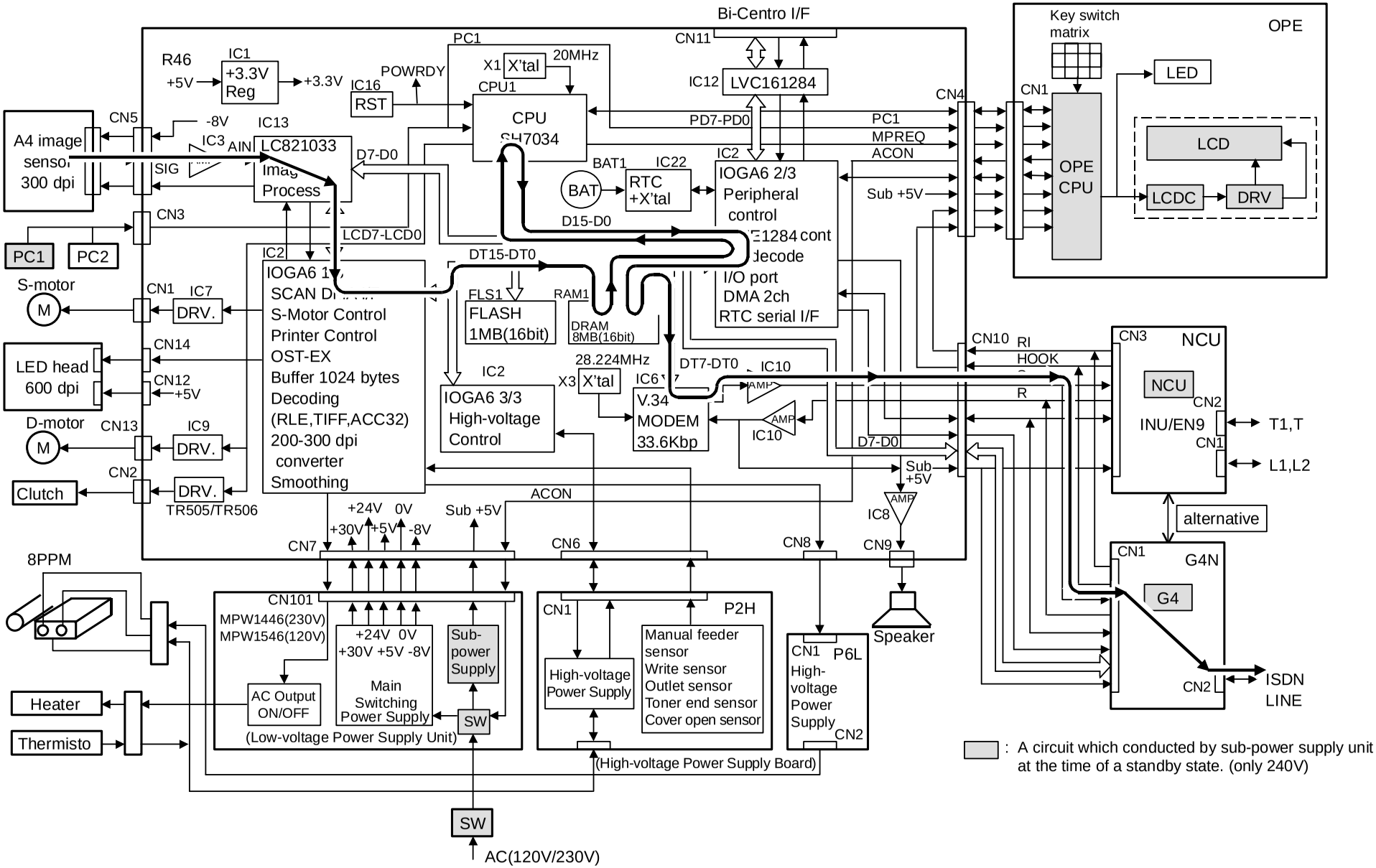


Figure A.5 (8/13) ISDN-G3 TX Picture Signal (OKIOFFICE87)

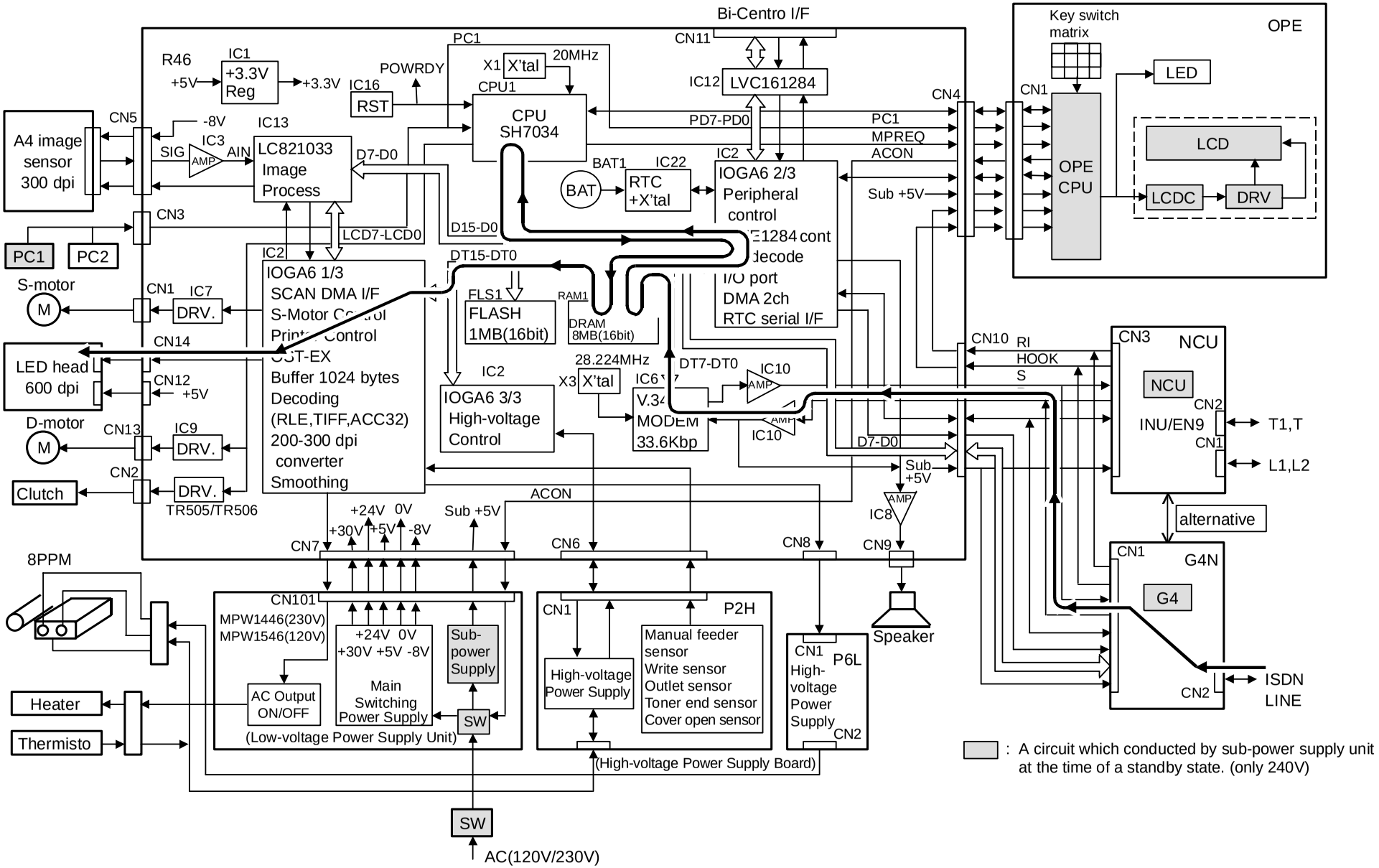


Figure A.5 (9/13) ISDN-G3 RX Picture Signal (OKIOFFICE87)

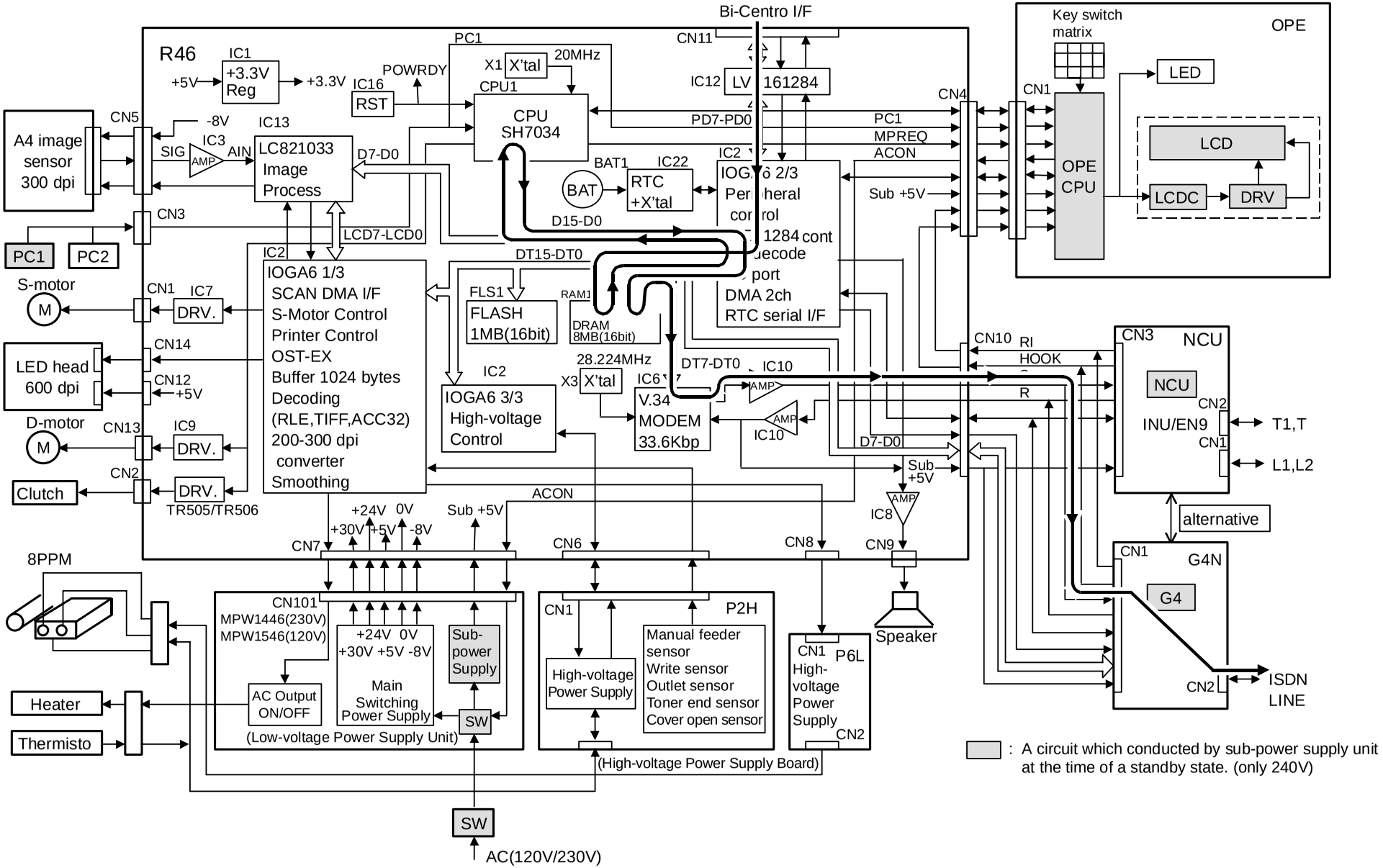


Figure A.5 (10/13) ISDN PC-FAX G3 TX Picture Signal (OKIOFFICE87)

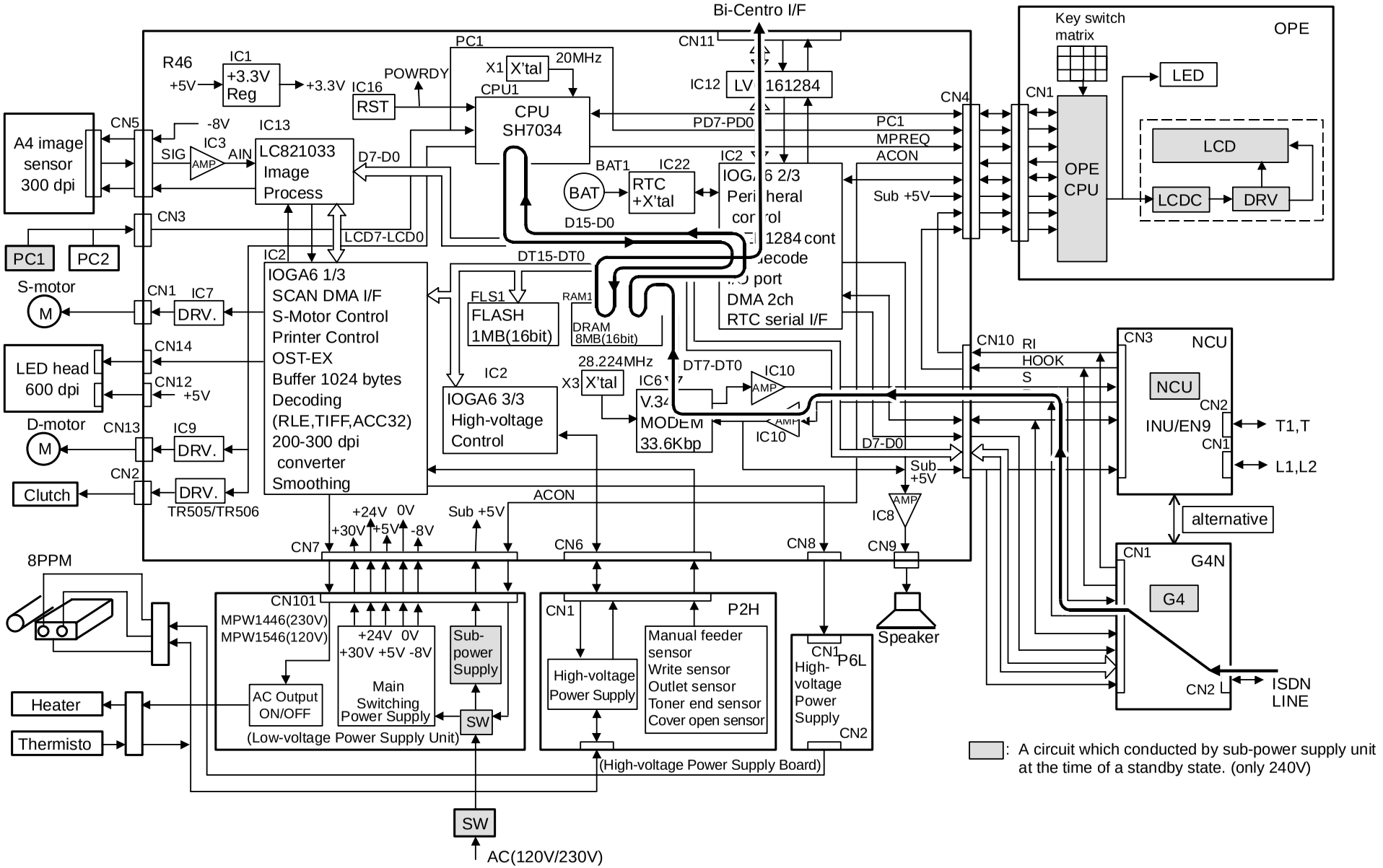


Figure A.5 (11/13) ISDN PC-FAX G3 RX Picture Signal (OKIOFFICE87)

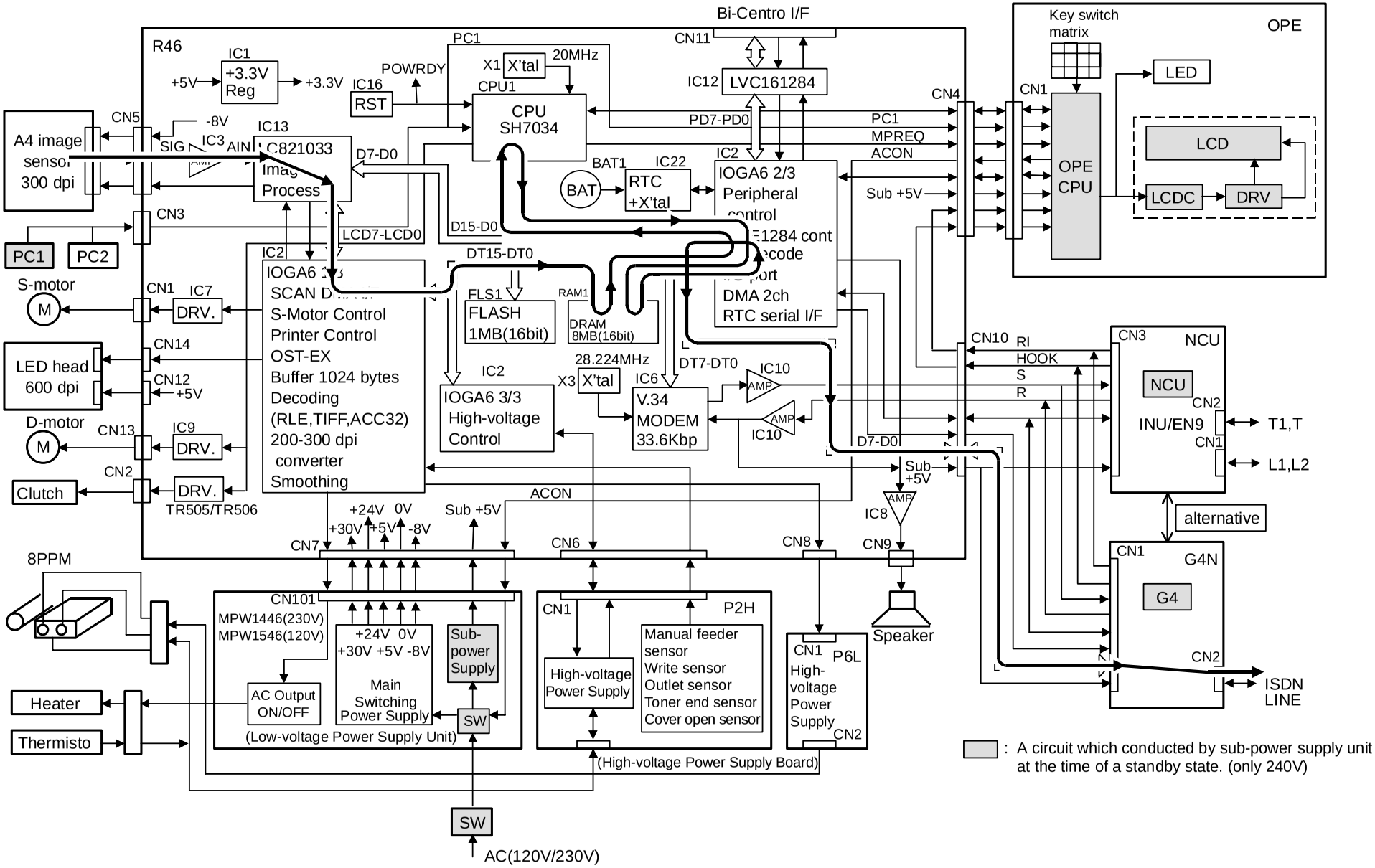


Figure A.5 (12/13) ISDN-G4 TX Picture Signal (OKIOFFICE87)

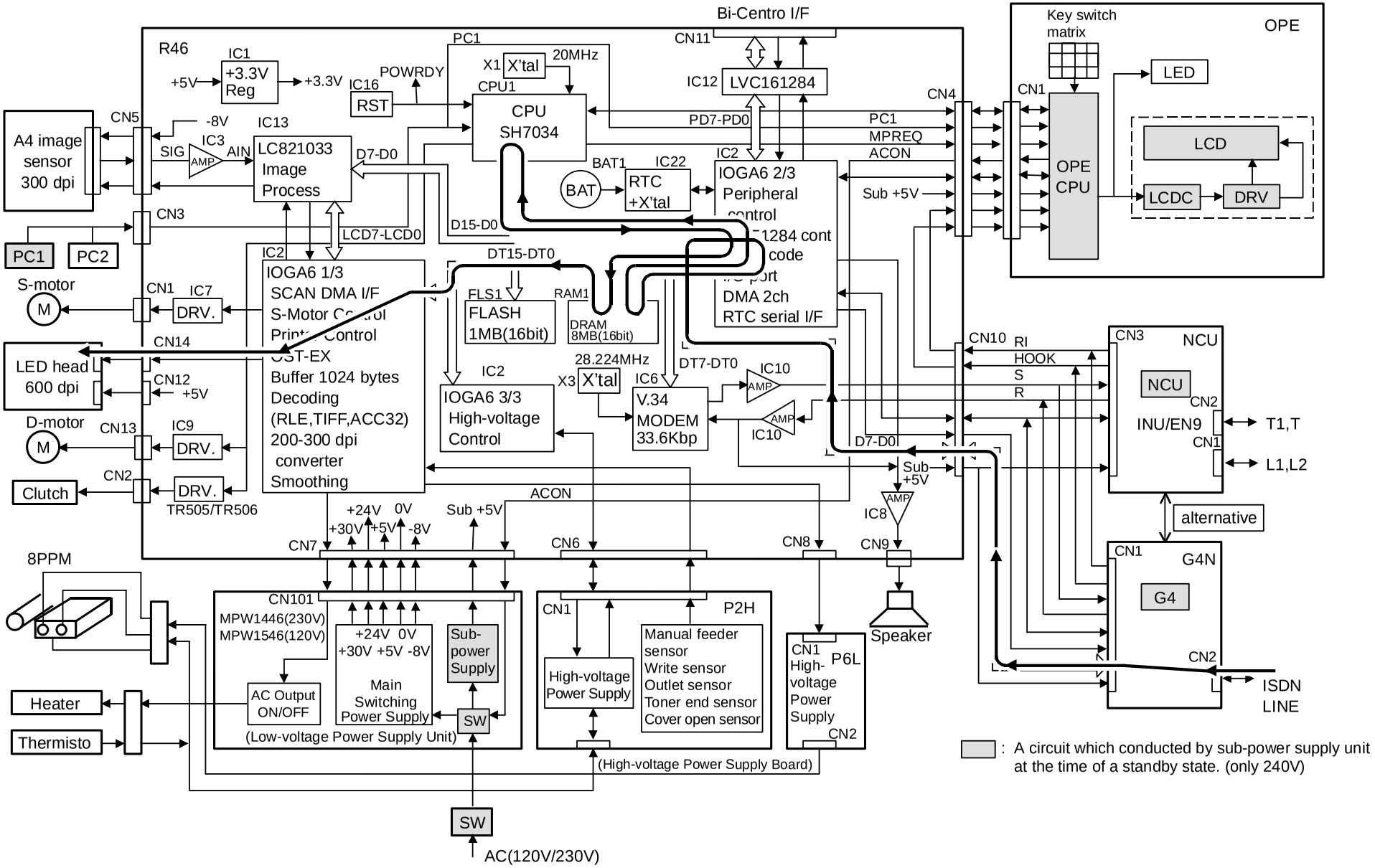


Figure A.5 (13/13) ISDN-G4 RX Picture Signal (OKIOFFICE87)

3. 46F Circuit Diagram (OKIFAX4550)

3.1 46F Circuit Diagram (1/13)

1. Block diagram
   46F-PCB circuit diagram (1/13) shown the consists of an input/output gate array IC2 (IOGA4), crystal oscillator circuit and reset signal generator.
   Figure A.6 shown the block diagram of IC2 (IOGA4) and the peripheral circuits.

2. Function
   1) IOGA4 is newly developed LSI for scanning, printing control and provided with a built-in CPU.
      - IOGA4 contains the following functions:
      • Scanned data DMA control
      • Strobe signals control for LED head
      • Smoothing control for printing data
      • Interface of the peripheral LSI

      - CPU
      CPU controls the following functions in addition to the basic processor.
      • DMA (Direct Memory Access) control
      • Interrupt procedure control
      • A/D converter
      • Bus state control
      • Programmable pattern control
      • 16 bit integrated timer pulse unit (ITU)
      • Timing pattern control (TPC)
      • Serial communication interface (SCT)

   2) Crystal oscillator circuit
      X1 is 20MHz crystal oscillator. The output wave is fed to the IOGA4 (CPU) through pin 14 and 15. CLK (20MHz) signal output from pin 94 is used as the system clock.

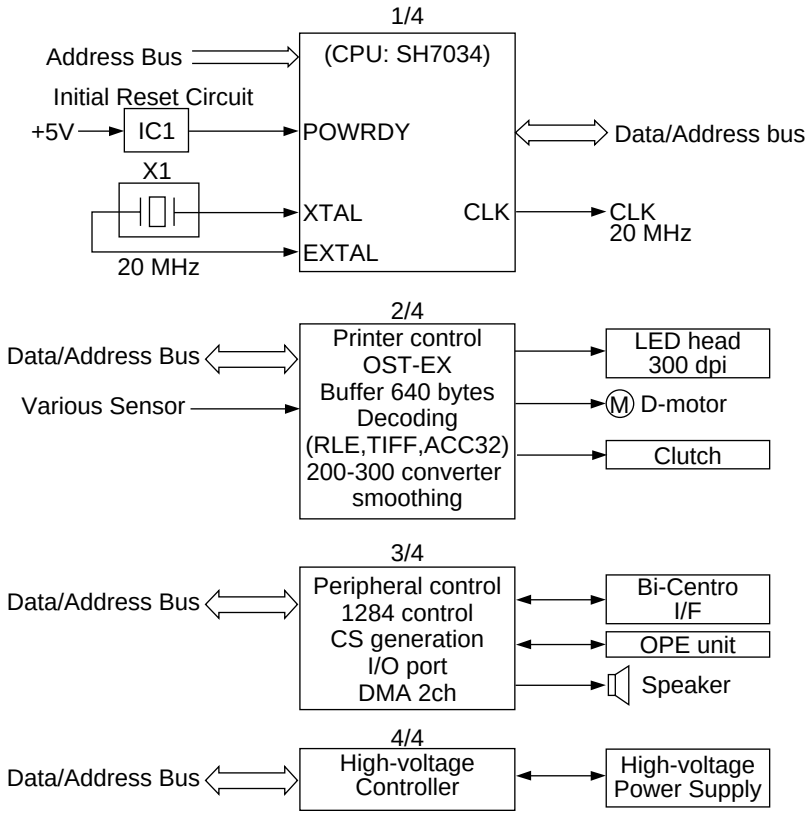


Figure A.6 Related Signals of IOGA4

3.2 46F Circuit Diagram (2/13)

1. Block diagram
   46F-PCB circuit diagram (2/13) shown the consists of Flash memory, DRAM, Real time clock IC and Back up battery circuit.

   Figure A.7 shows the block diagram of Flash memory, DRAM and Real time clock.

2. Function
   1) Flash memory (FLS)
      Flash memory (electrically erasable and programmable device) is used for the main software program, which is stored in EP-ROM of the current OKIFAX. Other than the function of EP-ROM, Flash memory is also used for the user data area instead of SRAM chips.

      • 1M Byte Flash memory × 1 (FLS)
        Used for work area, report recording etc.

   2) DRAM
      RAM2 and RAM3: 2MB (512k words × 16 bit) × 2 chips
      • Used as follows:
        Picture memory for the ECM send/receive mode.
        Picture memory for the memory transmission mode.
        Picture memory for the retransmission mode.
        Picture memory for the reception in memory.
        Editing for report printing.

   3) Back-up battery circuit
      The non-rechargable lithium battery supplies voltage to a real-time clock IC at AC main interruption.

   4) Real-time clock IC (IC3)
      IC3 is a real-time clock IC used as a timepiece to display the date and time in year, month, day, hour, minute, and second units. Its input/output signals are the 4-bit data bus (D0 - D3), 4-bit address bus (A1 - A4) and the control signals, RTCCS, MDMRD-N and MDMWR-N which perform a CPU-controlled read operation (M/D/Y H:M, Data read) and write operation (M/D/Y H:M, Data setting).

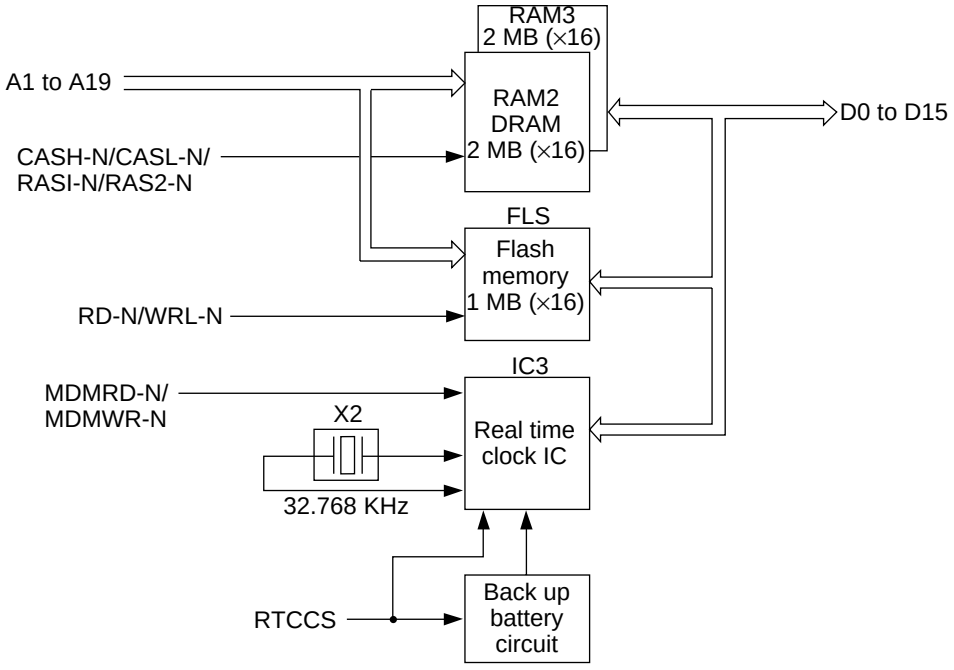


Figure A.7 Block Diagram of DRAM/Flash Memory and Real-time Clock IC

3.3 46F Circuit Diagram (3/13)

1. Block diagram
   46F-PCB circuit diagram (3/13) shown the consists of IC11 (analog switch IC) and IC5 (amplifier) generates the following audio monitor.

   • Line monitoring
   • Buzzer signals

   Figure A.8 shows the block diagram of audio monitor circuit.

2. Function
   1) Line monitoring
      Send and receive signals are input from the transformer on the NCU board to this circuit as a R signal and the signal power is input to the IC11. The IC11 adjusts the monitor volume by MONC0, MONC1 and MONC2 signal under the control of IOGA4. Output (high and low) from IC11 passes through the amplifier and is fed to the speaker as a SP signal.

      * MONC0/MONC1/MONC2 signal: Volume control signal.

      Note: In case of transmission mode, the monitor will be available during dialing, but the monitor will be switched off automatically after the elapse of specified time (about 5 sec).

   2) Buzzer control
      Alarm and other signals are input from IOGA4 to this circuit as BZ signals. The various buzzer signals are sounded under the control of IOGA4 (CPU).

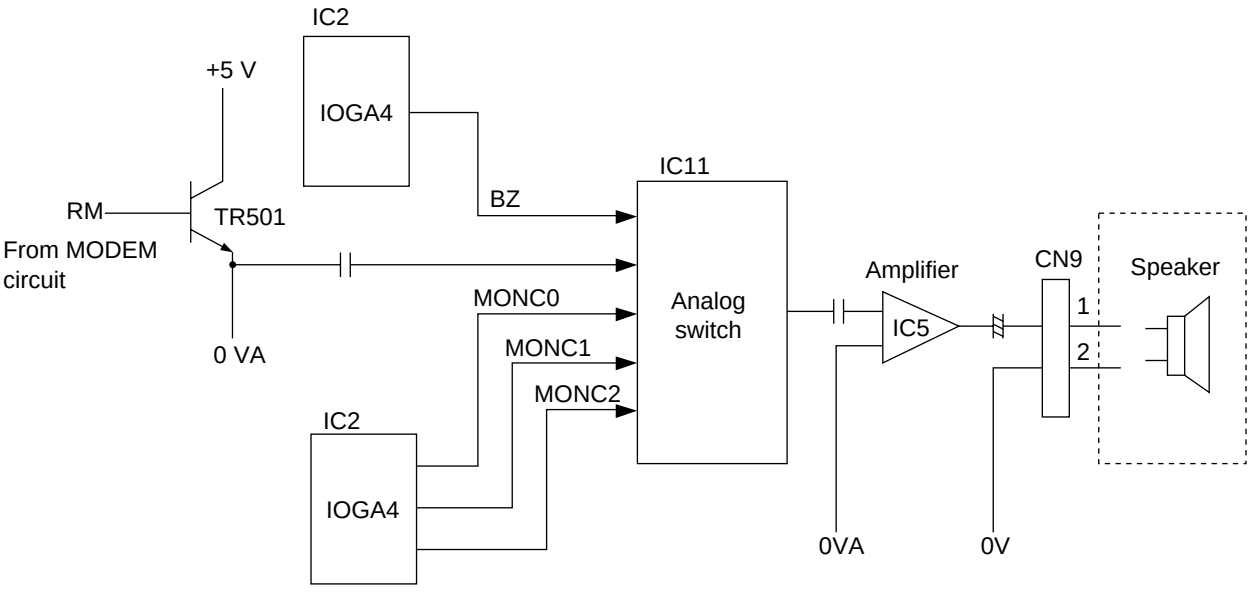


Figure A.8 Block Diagram of Audio Monitor Circuit

3.4 46F Circuit Diagram (4/13)

1. Block diagram
   46F-PCB circuit diagram (4/13) shown the consists of the following functions:
   • IC6 (A/D converter)
   • Connector CN5 that provides an interface between 46F board and CIS (contact image sensor).

   Figure A.9 (1/3) shows the related signals and block diagram of CIS.

2. Function
   One-line picture data is read in the sequence from the scanning unit (CIS) as SIG signal (analog data) to A/D converter (analog/digital converter) of IC6. After conversion from analog data to 6-bit digital signal (SDT2 - SDT7) under the control of IC6, this picture data is sent to IEXSEED300 (Scanning control LSI) of IC16. Here, the picture data undergoes various kinds of picture processings.

   Sensor interface signal output from IEXSEED300
   • LEDON : LED on/off control signal
   • SNSCLK : Scanning sensor drive clock (1.25 MHz)
   • MISP : Scanning synchronous signal (2.5 msec)
   • ADCLK : Sampling clock for A/D converter (1.25 MHz)

3. Signal timing
   Figure A.9 (2/3) shows the signal timing of contact image sensor, and Figure A.9(3/3) shows the signal timing of A/D converter.

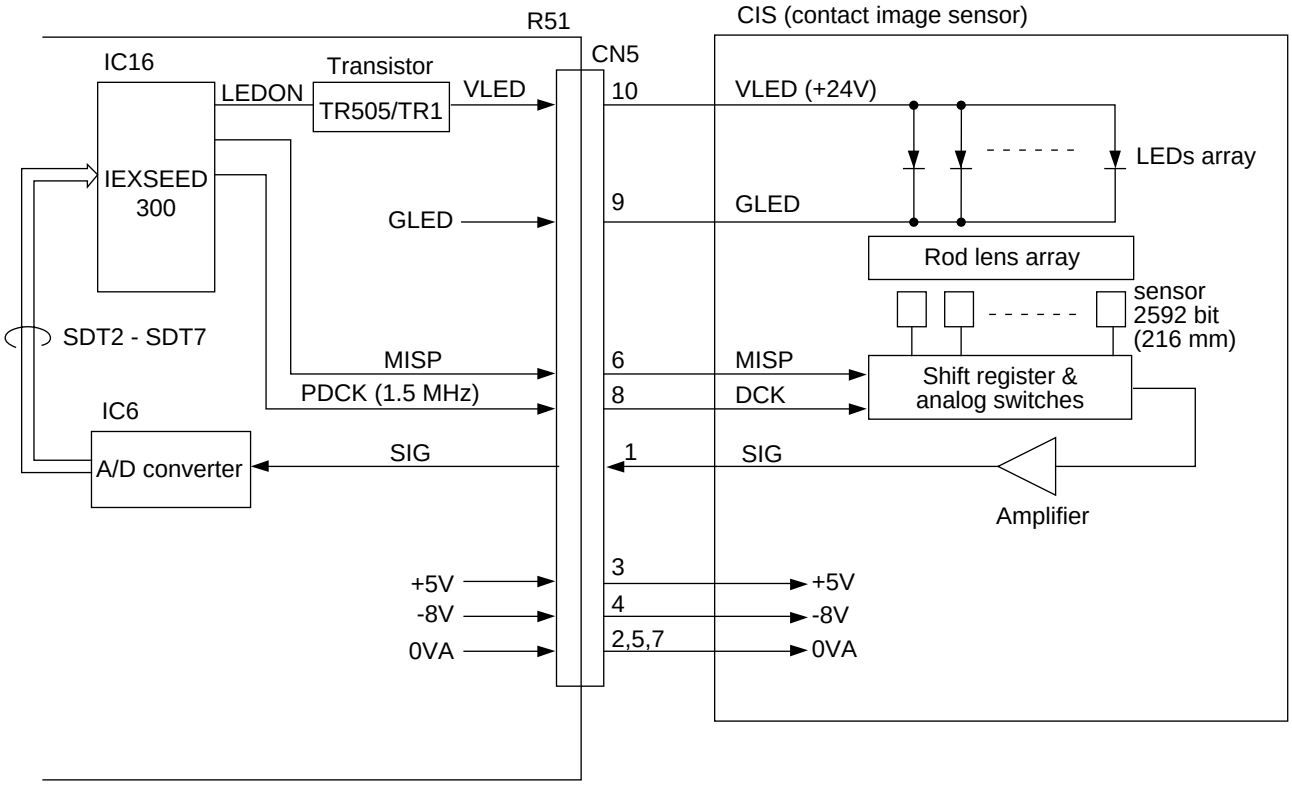


Figure A.9 (1/3) Related Signals and Block Diagram of CIS (contact image sensor)

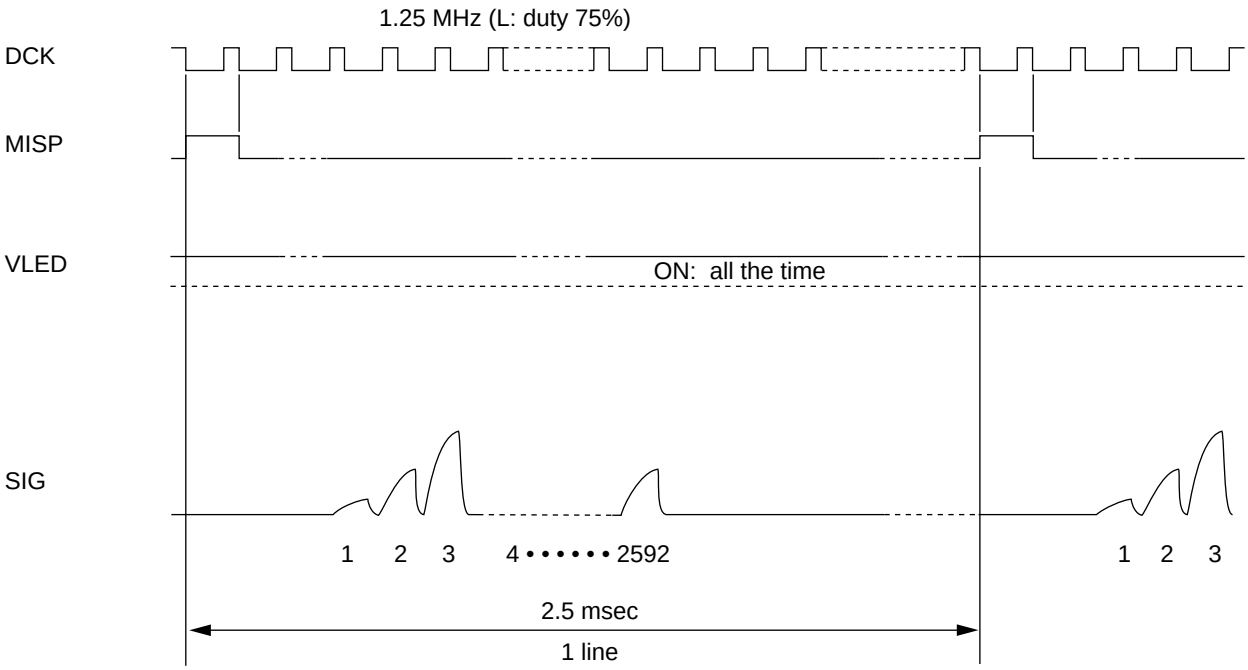


Figure A.9 (2/3) Signal timing of CIS (contact image sensor)

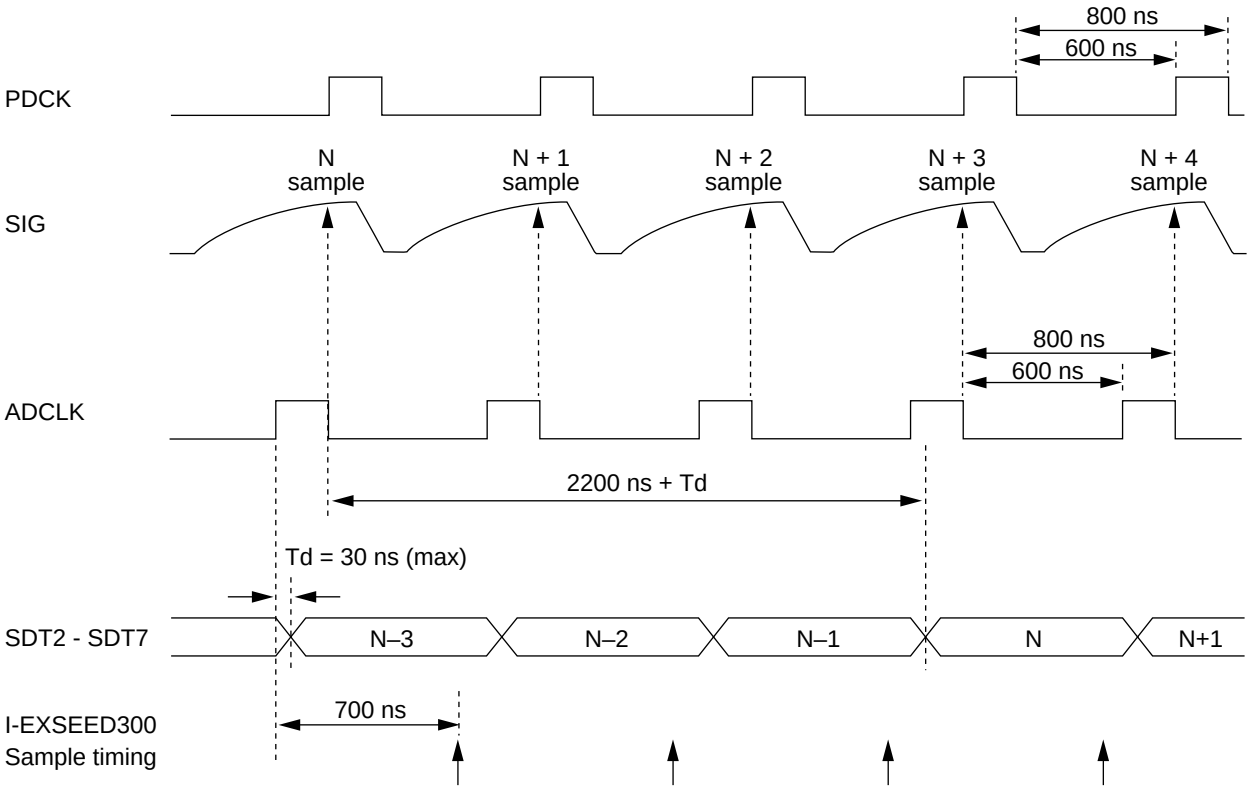


Figure A.9 (3/3) Signal timing of A/D converter

3.5 46F Circuit Diagram (5/13)

1. Block diagram
   46F-PCB circuit diagram (5/13) shown the consists of Modem (33.6 kbps).

   Modem consists the following functions:
   - Modulation/demodulation
     Modulation type:
     1) ITU-T Rec. V34 (33600/31200/28800/26400/24000/21600/19200/16800/14400/12000/9600/7200/4800/2400 bps) for G3 picture data.
     2) ITU-T Rec. V17 (14400/12000/9600/7200 bps) for G3 picture data.
     3) ITU-T Rec. V29 (9600/7200 bps) for G3 picture data.
     4) ITU-T Rec. V27 ter (4800/2400 bps) for G3 picture data.
     5) ITU-T Rec. V21 channel 2 (300 bps) for binary signals defined in ITU-T Rec. T.30.
   - Automatic adaptive equalizer for G3 receive data with 300 bps data excluded.
   - Generation of signal tones
   - PB tone (multi-frequency tone) generation
   - Detection of single tones
   - D/A converter for send data (TX)
   - A/D converter for receive data (RX)
   - Amplitude equalizer for RX
   - Selectable attenuation for TX
   - Automatic gain control

   Figure A.10 shows the related signals of Modem.

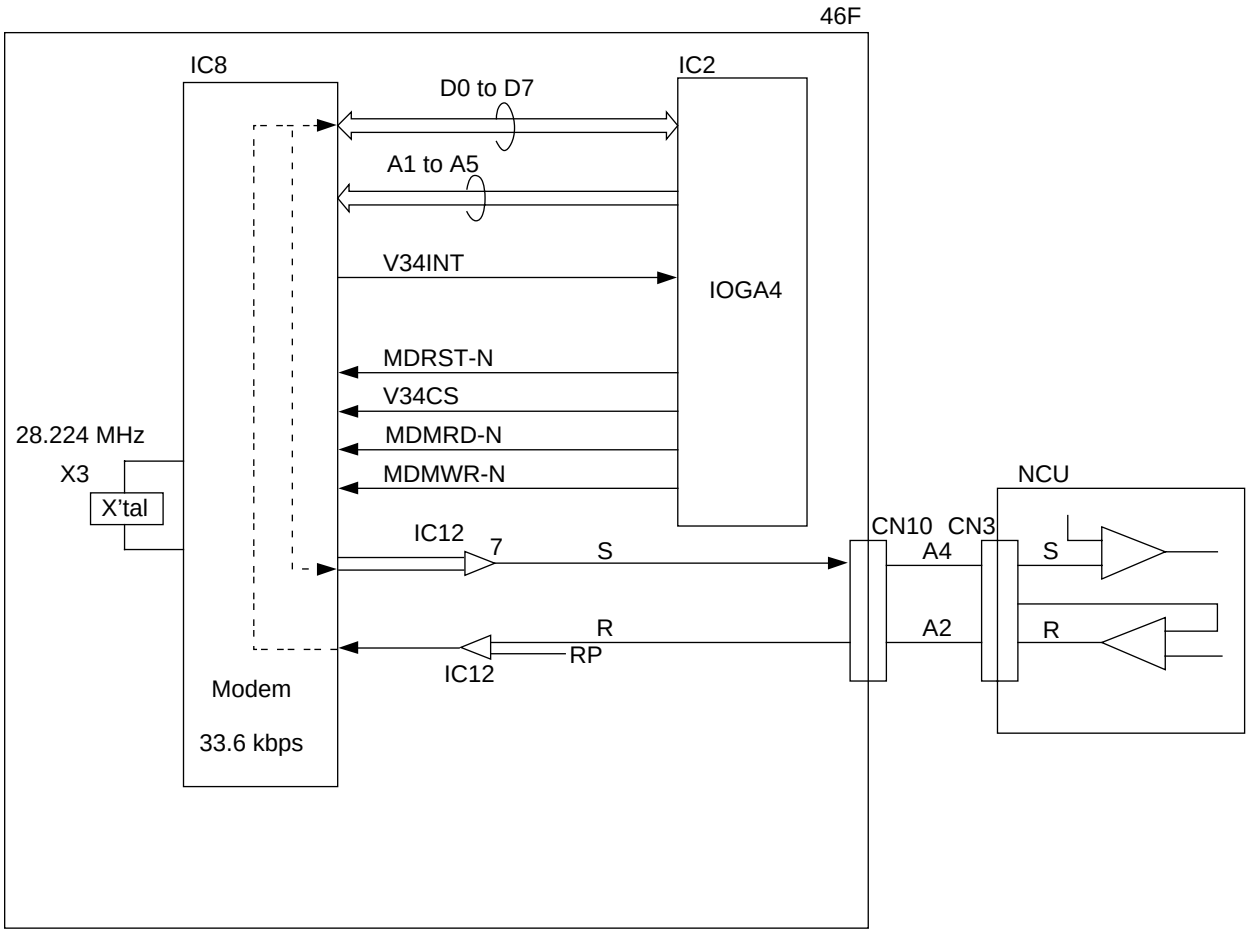


Figure A.10 Related Signals of Modem

3.6 46F Circuit Diagram (6/13)

1. Block diagram
   46F-PCB circuit diagram (6/13) shown the consists of connector CN12 that provides an interface between 46F board and LED print head.

   Figure A.11 (1/2) shows the related signals and block diagram of LED print head.

2. Function
   Data of 1664 LEDs on the LED print head is loaded into the shift registers by the HCLCK (4MHz or 6.7 MHz) signal. After the 1664 bit (208 mm) data is loaded in the shift registers, it is then loaded in the latch circuit by the HLATCH signal. The turning -on and off of the LEDs are controlled by STRB1-N to STRB4-N signals.

   LED head interface signals output from IOGA4
   - HDATA 0 : Print data i.e., data to be printed
   - HCLCK : Transfer clock for print data (4.0 MHz or 6.7 MHz)
   - HLATCH : Latch signal for print data
   - STRB1-N to STRB4-N : LED head strobe signals

3. Signal timing
   Figure A.11 (2/2) shows the timing chart of LED print head.

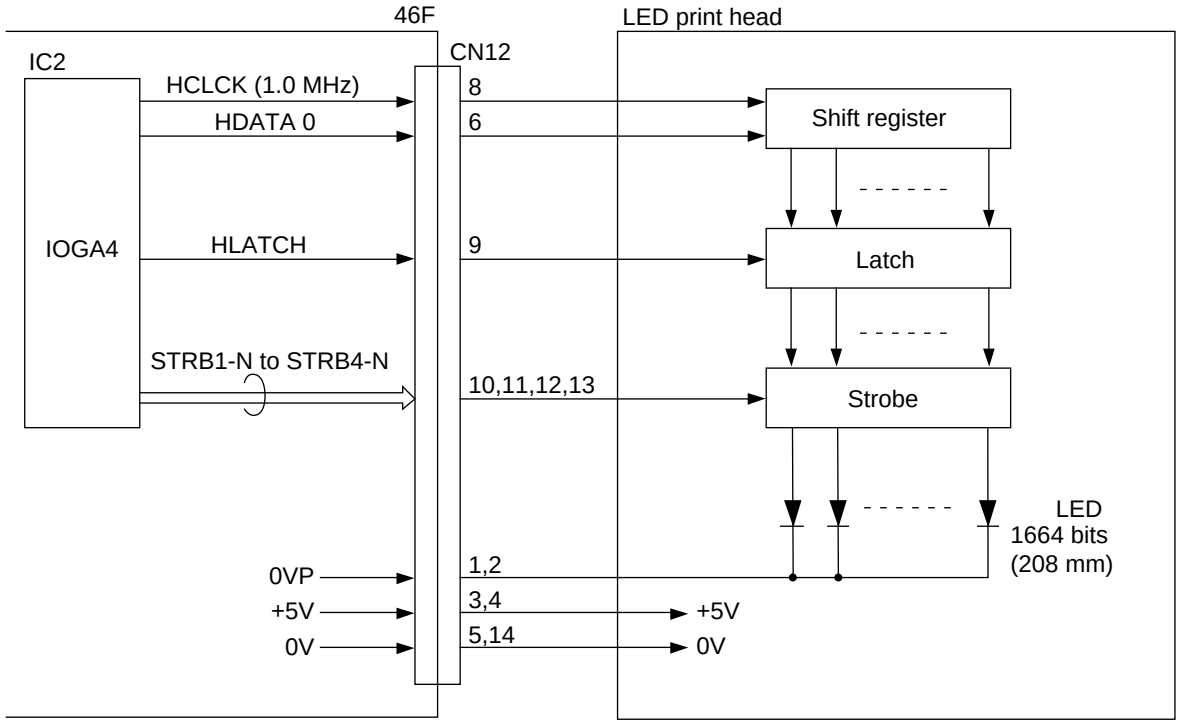


Figure A.11 (1/2) Related Signals and Block Diagram of LED Head

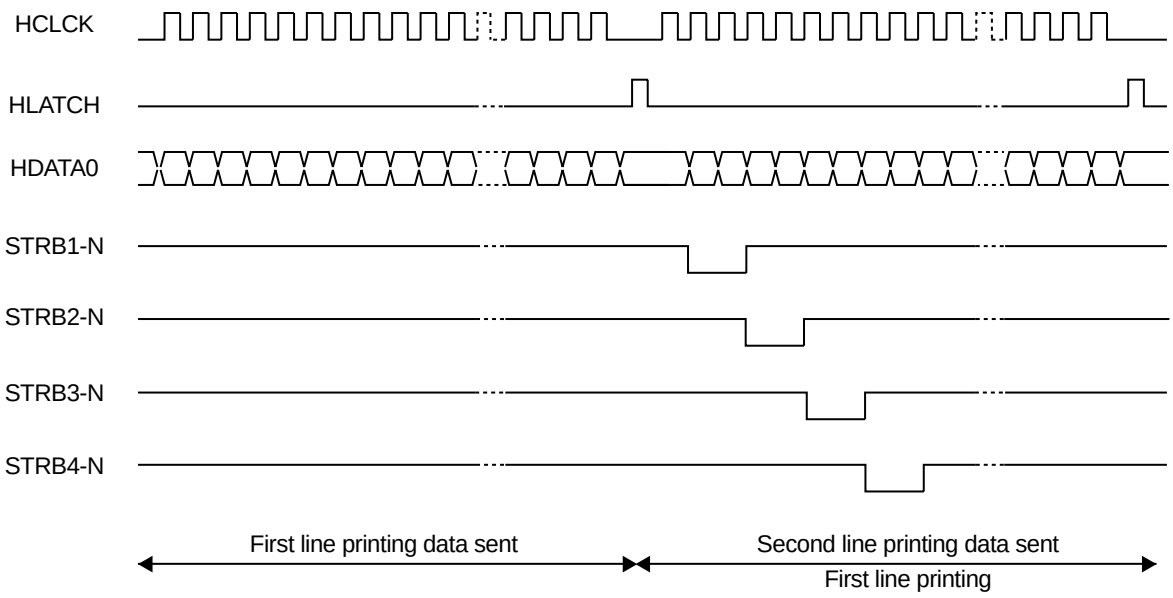


Figure A.11 (2/2) Normal Mode Printing Timing Chart

3.7 46F Circuit Diagram (7/13)

1. Block diagram

   46F-PCB circuit diagram (7/13) shown the consists of the following connectors:
   - Connector CN10 that provides an interface between 46F board and NCU/G4N board.
   - Connector CN3 that provides an interface between 46F board and external electro-mechanical conponents (PC1 and PC2).
   - Connector CN4 that provides an interface between 46F board and OPE (O4W) unit.

   Figure A.12 (1/4) shows an interface between 46F board and NCU board.
   Figure A.12 (2/4) shows an interface between 46F board and OPE unit.
   Figure A.12 (3/4) shows the communication signal between MCNT and OPE.
   Figure A.12 (4/4) shows the related signals of PC1 and PC2.

2. Function

   1) External status supervising interface (PC1/PC2)

      External status is detected by the photocouplers (PC1/PC2) in the mechanism and the signal is output to the input port of CPU via this interface circuit.
      - PC1: Presence of document on hopper.
        When sub-power supply is applied to the fax machine, this signal is output to OPE unit which will control the main-power supply.
      - PC2: Presence of document at scanning position.

3. Others

   NCU interface signal
   - CML : Line seizure control signal
   - DP : Dial pulse control signal
   - SR : Control signal for connection between LINE and TEL terminals
   - MUTE : Control signal for pulse dial improvement and bell shunt relay
   - PP : Relay control signal for special service code detection at parallel pickup or remote reception
   - PBXE : Control signal for connecting one of LINE terminal to the PBXE terminal
   - OH2-N : Detection of off-hook of terminal connected to TEL
   - RP : Receiving sensitivity determination terminal
   - RI : Ringing detection signal
   - S : Send signal (picture data/protocol/tonal signals/PB tone etc.)
   - R : Received signal (picture data/protocol/tonal signals etc.)

   OPE interface signals
   - TXDOPE : This signal transmits sequencially the contents of each data of TXD (LED on/off information, etc.) to OPE in serial data from CPU.
   - RXDOPE : This signal transmits sequencially the contents of each data of RXD (key code information, etc.) to CPU in serial data from OPE.
   - OPECHK : Use to monitor the operation of the OPE unit.
   - OPERST : Reset signal for OPE unit

   G4N interface signals
   Refer to section 9.

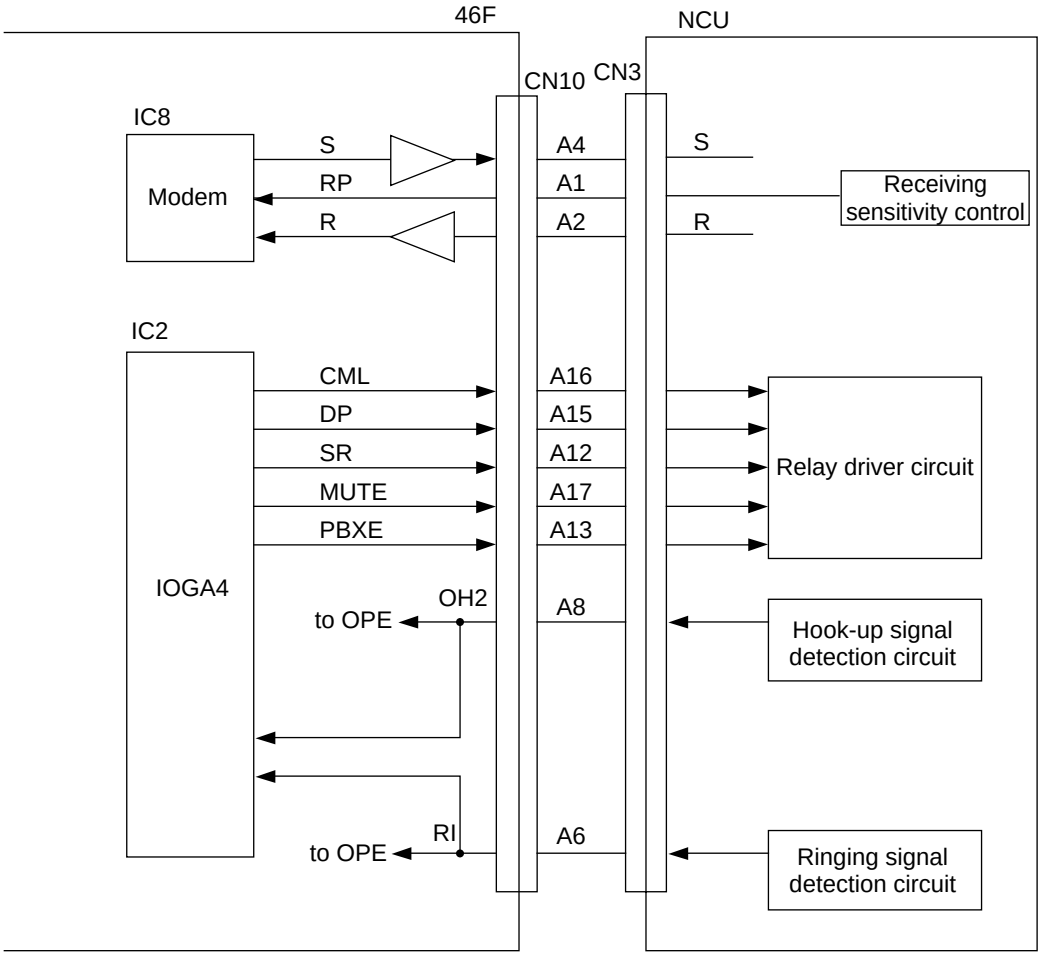


Figure A.12 (1/4) Interface between 46F Board and NCU Board

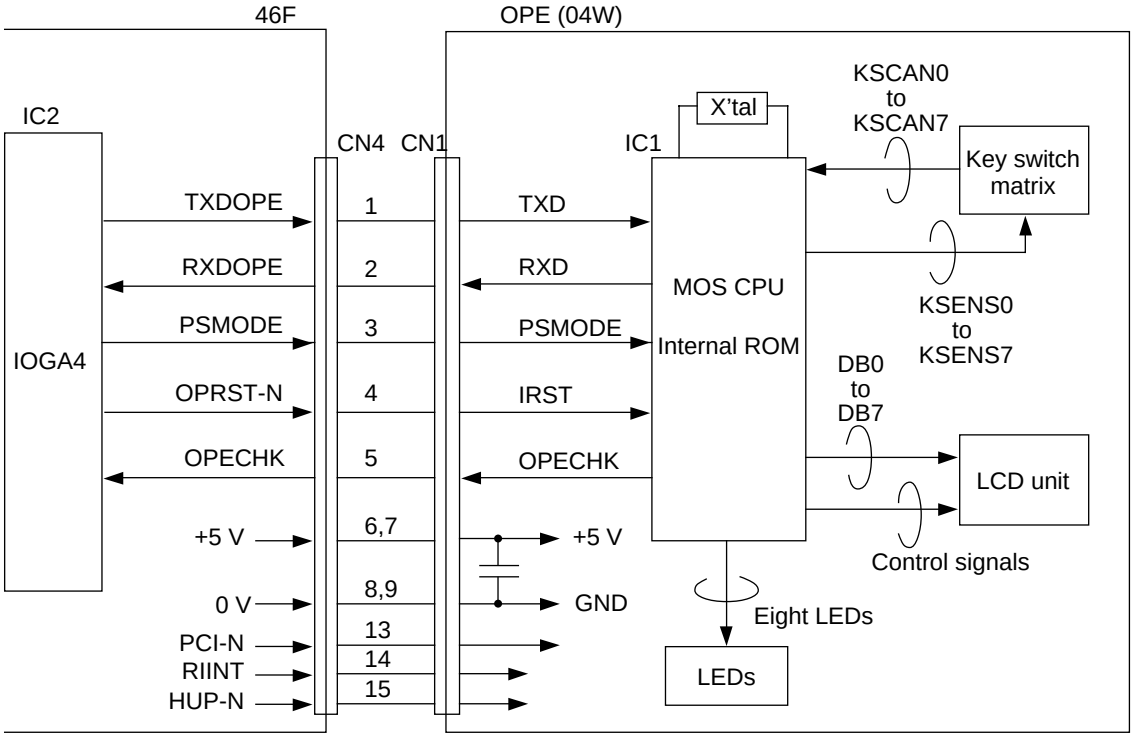


Figure A.12 (2/4) Interface between 46F Board and OPE (operation unit)

Between the MCNT and OPE, serial data is transferred via the SIO incorporated in the CPU.

<Communication method>

1) Communication method: Start-stop synchronization
2) Transfer rate: 5832 bps
3) Data length: 8 bits

<Data configuration>

1) Status bit: 1 bit
2) Data: 8 bits
3) Even parity: 1 bit (ignored by OPE)
4) Stop bits: Bits 1 and 5
   Error = ±5%

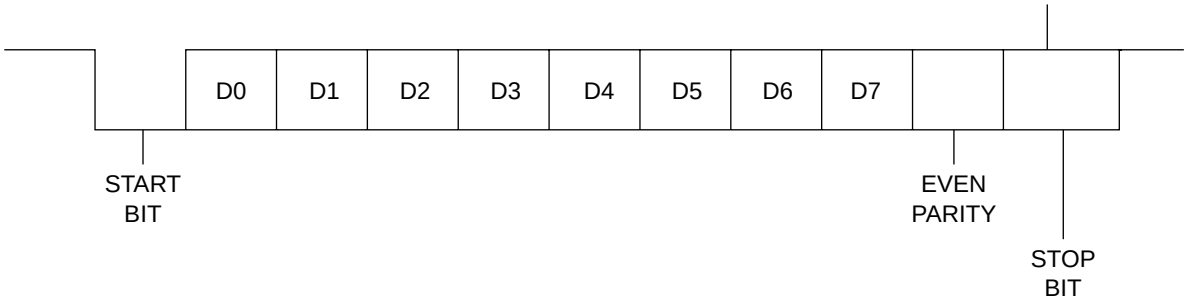


Figure A.12 (3/4) Communication signal (TXDOPE/RXDOPE) between MCNT and OPE

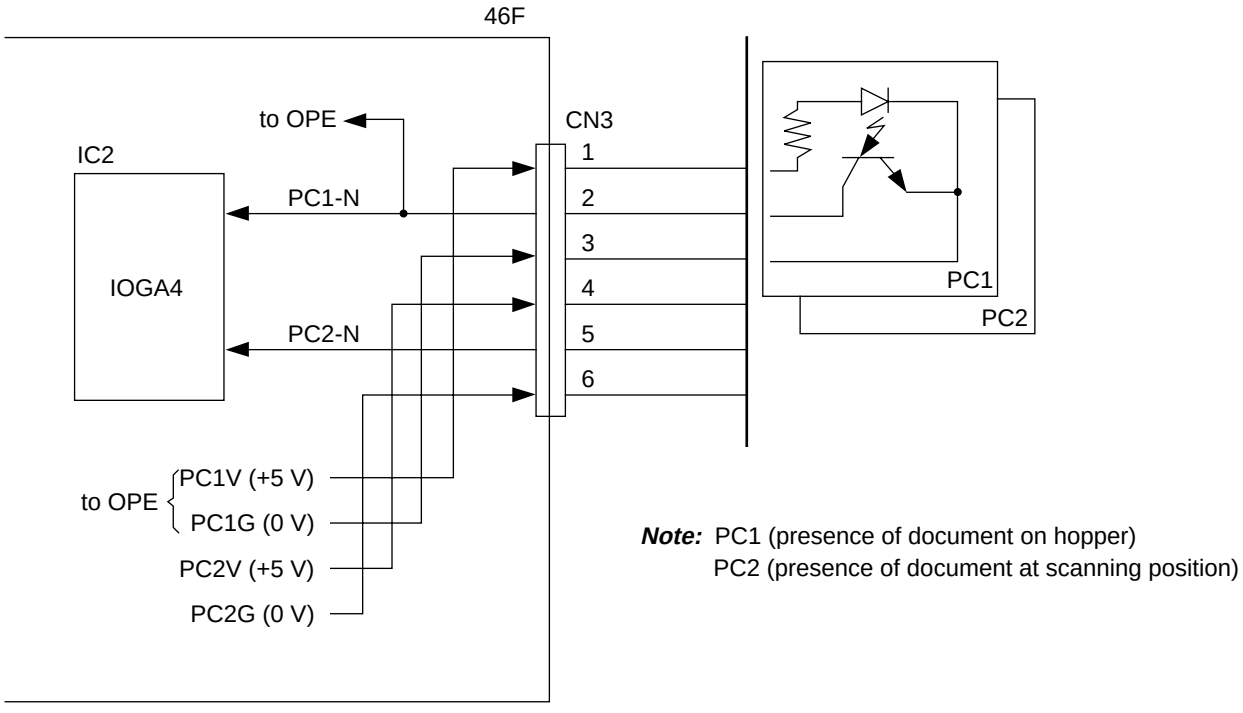


Figure A.12 (4/4) Related Signals of PC1/PC2

3.8 46F Circuit Diagram (8/13)

1. Block diagram
   46F-PCB circuit diagram (8/13) shown the consists of the following functions and connectors:
   • IC9 (Drum motor driver)
   • Connector CN13 that provides an interface between 46F board and the drum motor.

   Figure A.13 shows the related signals of the drum motor.

2. Function
   1) Drum motor control

      This drum motor is driven by the motor driver IC9. It is two-phase excited and bipolar-driven according to the DMPH1, DMPH2 and DMON1-N signals that are generated from the IOGA4 (CPU). This drum motor rotates the image drum.

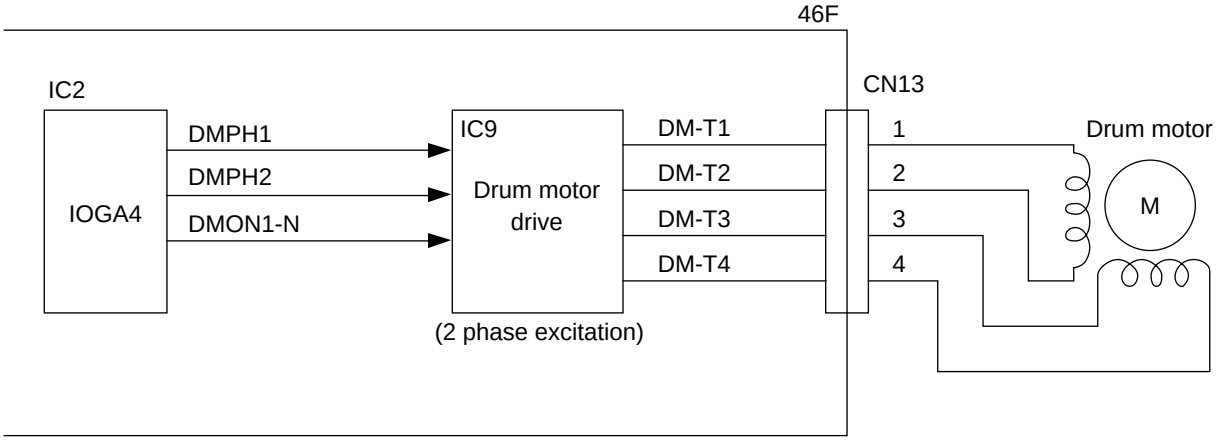
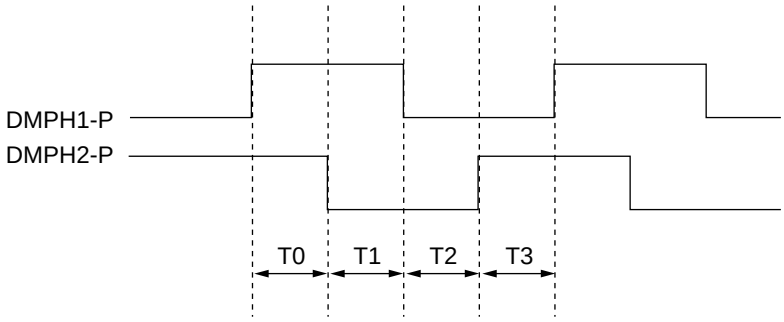


Figure A.13 (1/2) Related Signals of Drum Motor

   2) Drum motor timing chart



Operation at normal speed: T0 to T3 = 0.781 ms

Figure A.13 (2/2) Drum motor signal timing chart

   3) Drive control
      Time T0 to T3 determines the motor speed, while the difference of phase direction between phase signals DMPH1-P and DMPH2-P determines the rotation direction, DMON1-N signals control a motor coil current. According to the polarity of the phase signal, the coil current flow as follows:

      1) +38V → SW → motor coil → SW → resistor → earth, or,
      2) +38 → SW → motor coil → SW resistor → earth

      The voltage drop across the resistor is input to comparator, where it is compared with a reference voltage. If an overcurrent flow occurs, a limiter operates to maintain it within a certain fixed amount of current.

3.9 46F Circuit Diagram (9/13)

1. Block diagram
   46F-PCB circuit diagram (9/13) shown the consists of the following function and connectors:
   • IC7 (Send motor driver)
   • TR512/TR513 (Clutch driver)
   • Connector CN1 that provides an interface between 46F board and the send motor.
   • Connector CN2 that provides an interface between 46F board and the clutch.

   Figure A.14 (1/2) shows the related signals of the send motor and clutch.
   Figure A.14 (2/2) shows the timing chart of send motor.

2. Function
   1) Send motor rotation and chopper control
      Send motor drive signals are generated by the IEXSEED300 and output to send motor via IC7 (motor drive IC) of this circuit.

      Note: The built-in motor control circuit of IEXSEED300 consists of the following blocks:
      - Setting of the excitation operation
      - Setting of the chopping operation
      - Setting of the motor excitating method (1-2/2-1 phase excitation)

      a) Send motor rotation control
         There are several cases of the rotation operation:
         Forward rotation for feeding documents.
         - Case 1: Feeding document from hopper to the position where one line data is read.
         - Case 2: Feeding document while reading.
         - Case 3: Feeding document after a page has been read.

      b) Send motor chopper control
         The purpose of chopper control is to reduce the current to the motor by setting the phase signal on and off intermittently when a time lapse exceeding a specific time occurs without a phase update.

   2) Clutch
      When starting to print, performs the paper supply of recording paper by using this clutch. Clutch is driven by clutch signal generated from IOGA4.

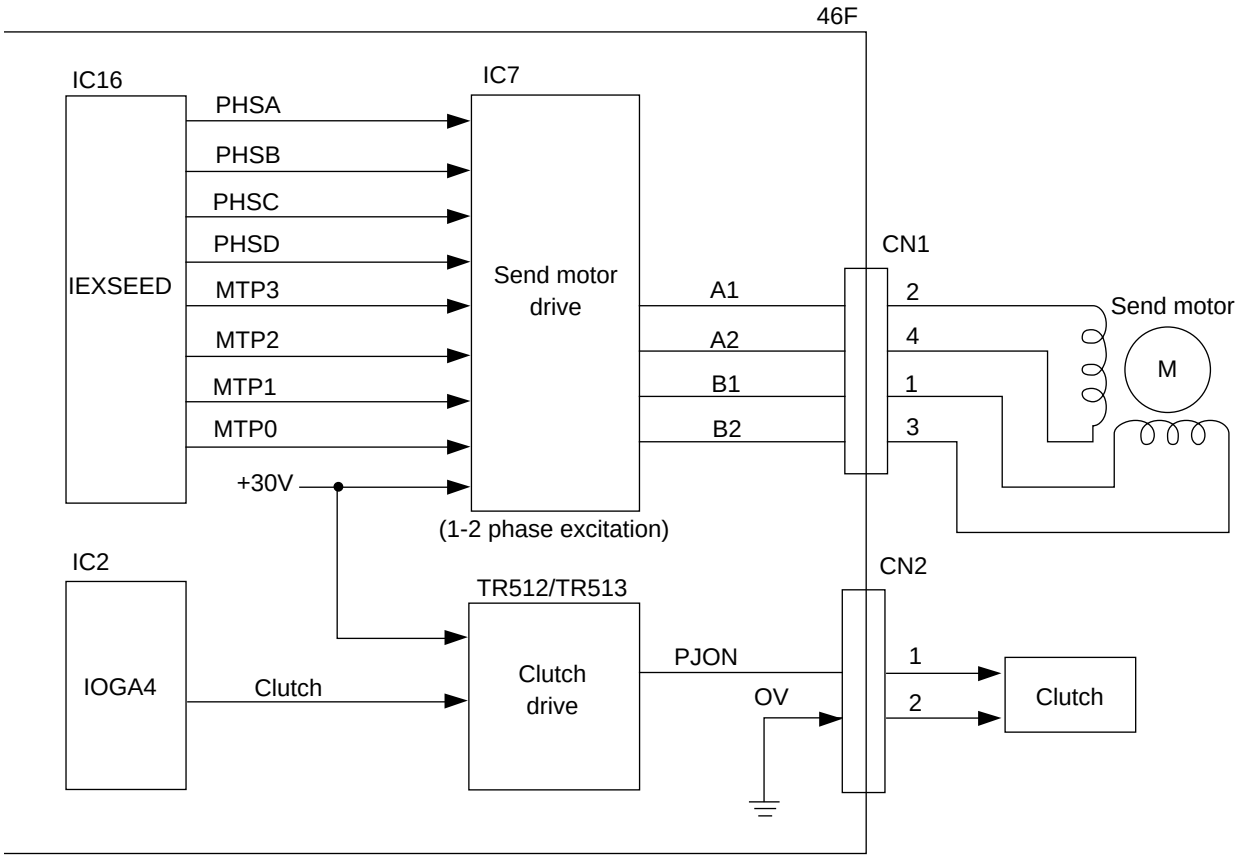


Figure A.14 (1/2) Related Signals of Send Motor and Clutch

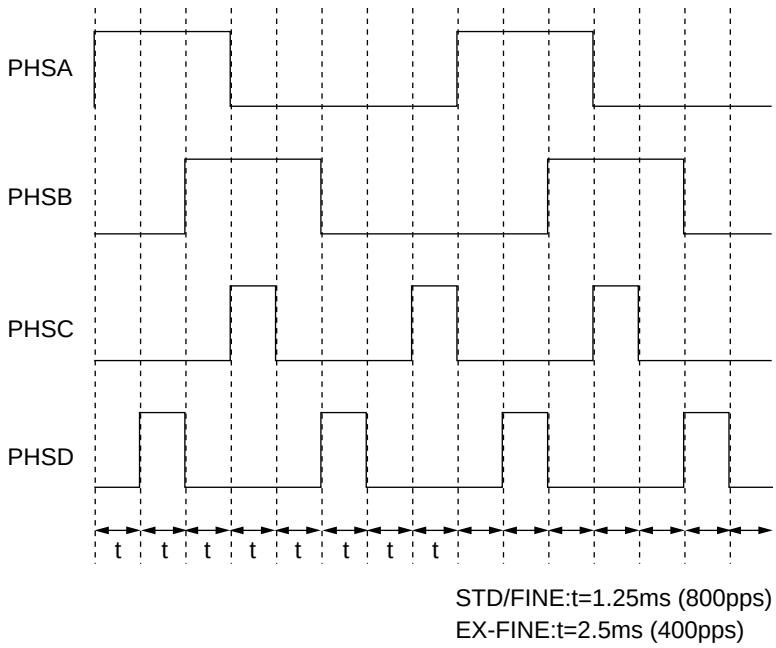


Figure A.14 (2/2) Timing Chart of Send Motor

3.10 46F Circuit Diagram (10/13)

1. Block diagram
   46F-PCB circuit diagram (10/13) shown the consists of the following connectors:
   • Connector CN11 that provides an interface between 46F board and Bi-Centro I/F.

   Figure A.15 (1/2) shows the interface between 46F and Bi-Centro I/F.
   Figure A.15 (2/2) shows the timing chart of Centronics Parallel Interface.

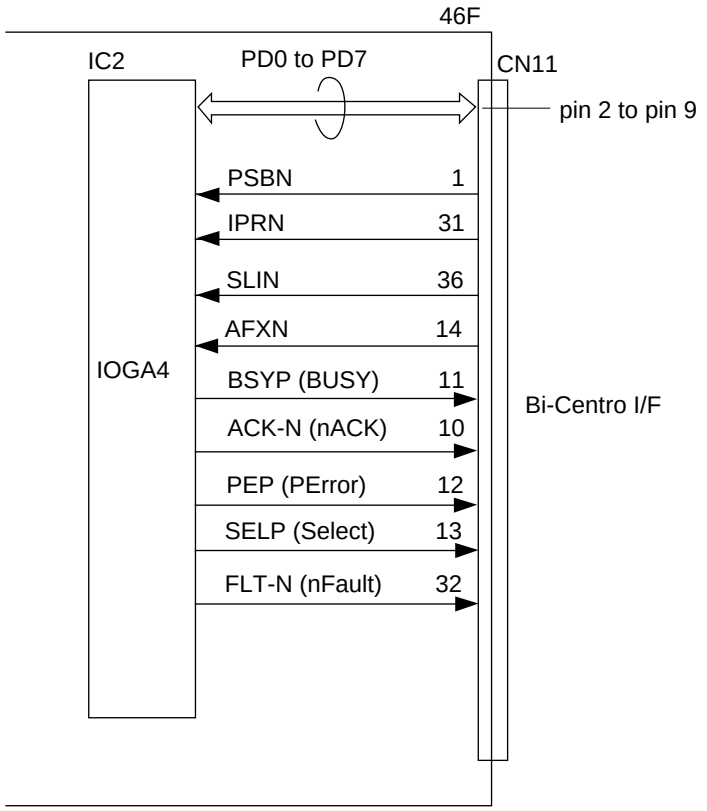


Figure A.15 (1/2) Interface between 46F Board and Bi-Centro I/F

The LSI sets a BUSY-P signal to ON at the same time when it reads the parallel data (PD0 to PD7) from the parallel port at the fall of STB-N signal. Furthemore, it makes the store processing of receiving data into a recive buffer terminate wthin a certain fixed time and outputs an ACK-N signal, setting the BUSY-P signal to OFF.

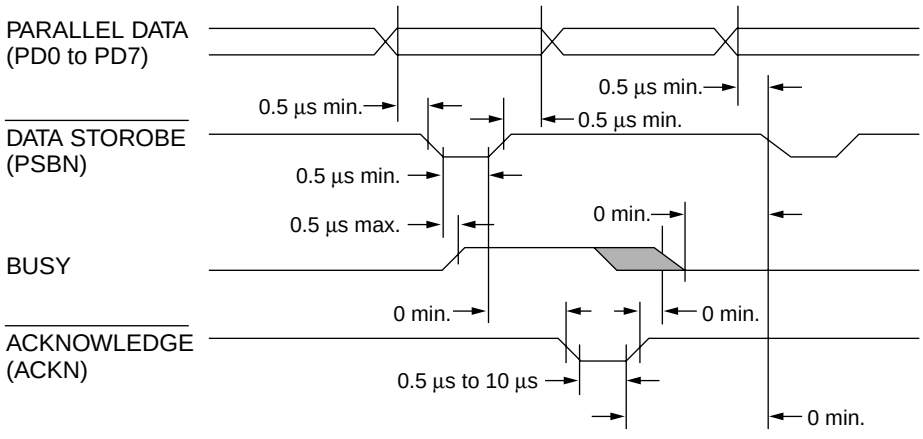


Figure A.15 (2/2) Timing Chart of Centronics Parallel Interface

3.11 46F Circuit Diagram (11/13)

1. Block diagram
   46F-PCB circuit diagram (11/13) shown the consists of the following connector:
   - Connector CN6 that provides an interface between 46F board and power supply unit (P2H).
   - Connector CN7 that provides an interface between 46F board and power supply unit (MPW1446/MPW1546).
   - Connector CN8 that provides an interface between 46F board and power supply unit (P6L).

2. Function
   1) Sensor and switch control
      Five types of sensors are used in the printer as listed below. All of their output enter IOGA4 ports for referring to and processing by the IOGA4 (CPU).
      Figure A.16 (1/4) shows sensors and switch control.

      - Inlet sensor 1
      - Write sensor (To detect the paper top position for printing)
      - Outlet sensor
      - Toner end sensor
      - Cover status switch

      The functions of various sensors are described in the following table.

Table A.1 shows the method of toner low detection

Sensor Type	Sensor Name	Function
PSIN-N	Inlet sensor	This photosensor is positioned before the resist roller to detect whether the paper has entered into the printer section.
WRSNS-N	Write sensor	Detects the arrival of paper at designated position on the paper transport route inside the printer in order to turn on the light of the LED head. 0: Paper exists, 1: Paper does not exist
PSOUT-N	Outlet sensor	Located at the exit of the printer to supervise the paper exit operation. 0: Paper exists, 1: Paper does not exist
TNRSNS-N	Toner sensor	Detects the remaining toner in the toner cartrige. "The length of time of low-toner state within fixed time interval" detects a low-toner state.
CVOPN-N	Cover open sensor	Detects whether the cover of the printer section is open or not. 0: Cover is open, 1: Cover is close

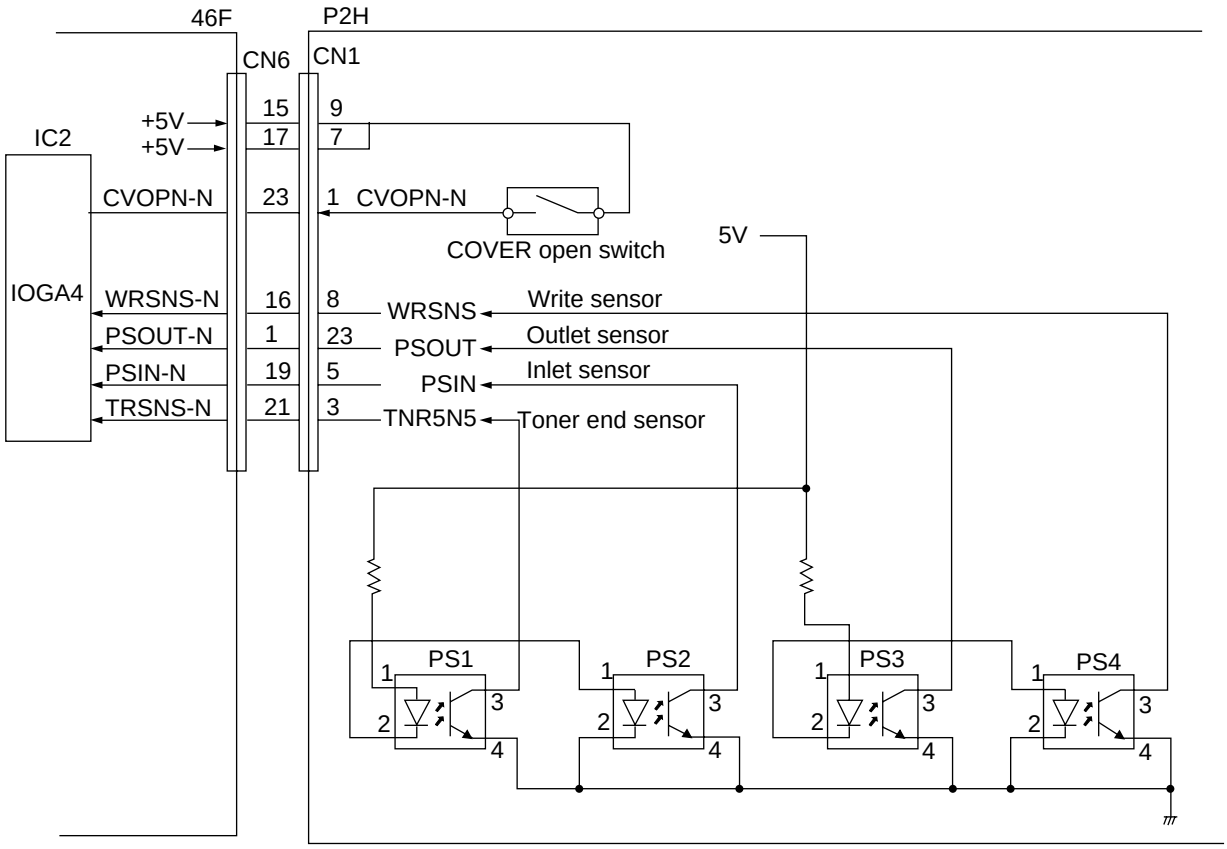
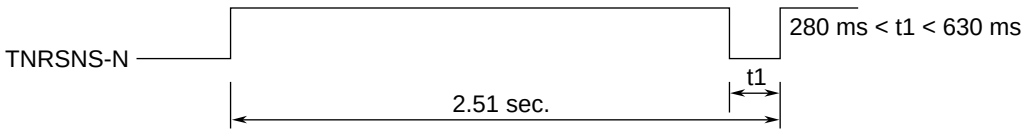


Figure A.16 (1/4) Sensor and Switch Control

TONER FULL state



TONER LOW state

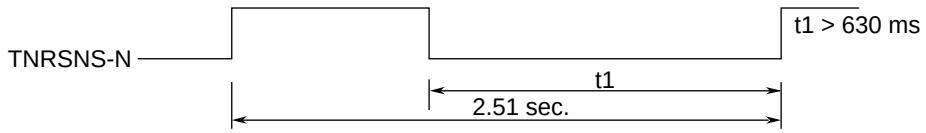


Figure A.16 (2/4) Method of toner low detection

- When the Toner Low state is detected 2 times consecutively, Toner Low is established.
- When the Toner Full state is detected 2 times consecutively, Toner Low is cancelled.
- When there is no change with the toner sensor for 2 cycles (2.51 sec. × 2) or more, then the Toner Sensor Alarm is activated.
- The toner sensor is not monitored while the main (drum) motor is in a halt.

2) Fuser unit temperature control

The heater in the fuser unit is controlled by the thermister, IOGA4 keeps the heater roller surface within a prescribed temperature range. The IOGA4 supervises the status of THCHK (A/D converter input section) periodically, turning HEATON signal on and off according to IOGA4 of THCHK status to exercise temperature control.

At power on time, the IOGA4 switches the output signal THON from pin 59 (between high and low states) to check for a blown or shorted thermister according to the status of the THCHK signal.

A built-in thermostat in the fuser unit prevents the heater from being overheated in event of failures in the thermister, or temperature control circuit, etc.

Figure A.16 (3/4) shows the fuser unit temperature control.

Note: Heater control

Temperature of the heater at the time of printing is 150˚C to 180˚C. This temperature is maintained by controlling the on and off operation of heater according to the input of the thermister converted into analogue-digital (A/D) values by the IOGA4.

2)-1 Heater control

The ACON control signal on the secondary side is transmitted to the primary side via PC4 to turn triac TRA1 for AC voltage supply to the heater.

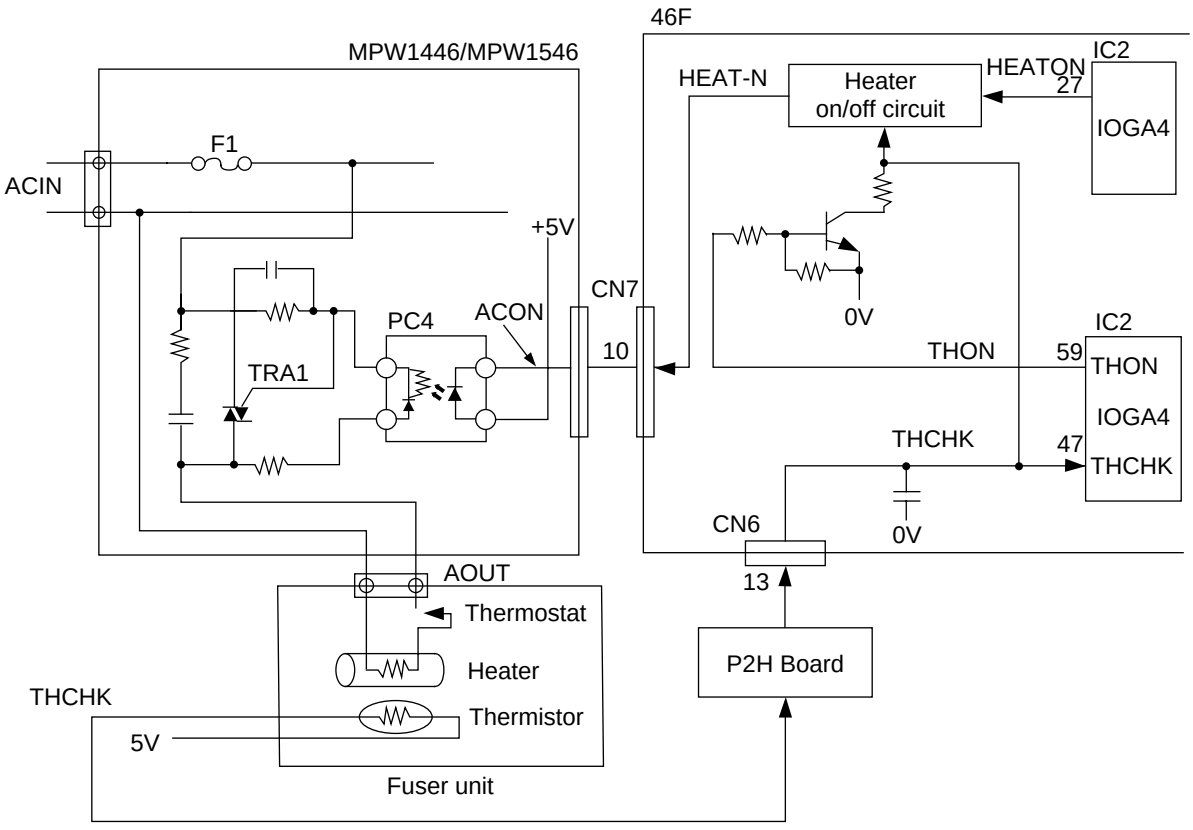


Figure A.16 (3/4) Fuser Unit Temperature Control

3) High-voltage and medium-voltage control

High voltages are activated by IOGA4 and generated by the high-voltage circuit inside the power supply unit. The CH (charge) voltage of about -1.30kV is used for the charge roller. The TR1/TR2 (transfer) voltage of about +3.9kV/-0.75kV is used for the transfer roller.

Medium voltages are activated by IOGA4 and generated by the medium-voltage circuit inside the power supply unit. The SB1/SB2 (toner supply) voltage of about +0V/-450V is used for the toner supply roller. The DB1/DB2 (developing) voltage of about +265V/-265V is used for the developing roller. The CB (cleaning) voltage of about +400V/-1.35kV is used for the cleaning roller.

Figure A.16 (4/4) shows high/medium voltages control.

* Signals used to control the high/medium-voltages are listed below.

Signal Name	Description
CHON	"1": CH is output. (-1.30kV)
DBON1	"1": + ive polarity voltage of DB/SB is output. (+265V)
DBON2	"1": - ive polarity voltage of DB/SB is output. (-265V)
TRON1	"1": + ive polarity voltage of TR is output. (+3.9kV)
TRON2	"1": - ive polarity voltage of TR is output. (-0.75kV)
CB1ON	"1": + ive polarity voltage of CB is output. (+400V)
CB2ON	"1": - ive polarity voltage of CB is output. (-1.35kV)

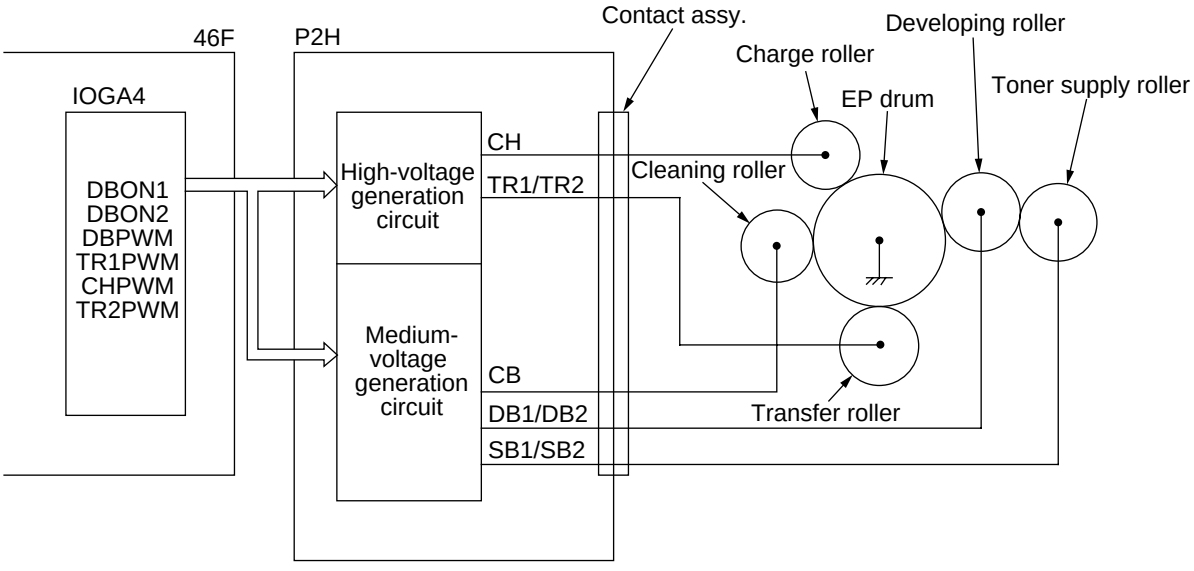


Figure A.16 (4/4) High/Medium Voltages Control

3.12 46F Circuit Diagram (12/13)

1. Block diagram
   46F-PCB circuit diagram (12/13) shown the consists of the IEXSEED300 (image processing LSI) of IC16 and SRAM.

   Figure A.17 shows the related signals of IEXSEED300.

2. Functions
   IEXSEED300 is d eveloped LSI for the image processing.
   IEXSEED300 contains the following functions:
   • Contact image sensor driver
   • Send motor forward rotation/chopping control
   • Line buffer control

3. SRAM
   32 KByte SRAM × 1 (RAM1)
   Stores the dark/light level correction data.
   Error diffusion data and image separation data are processed by IEXSEED.

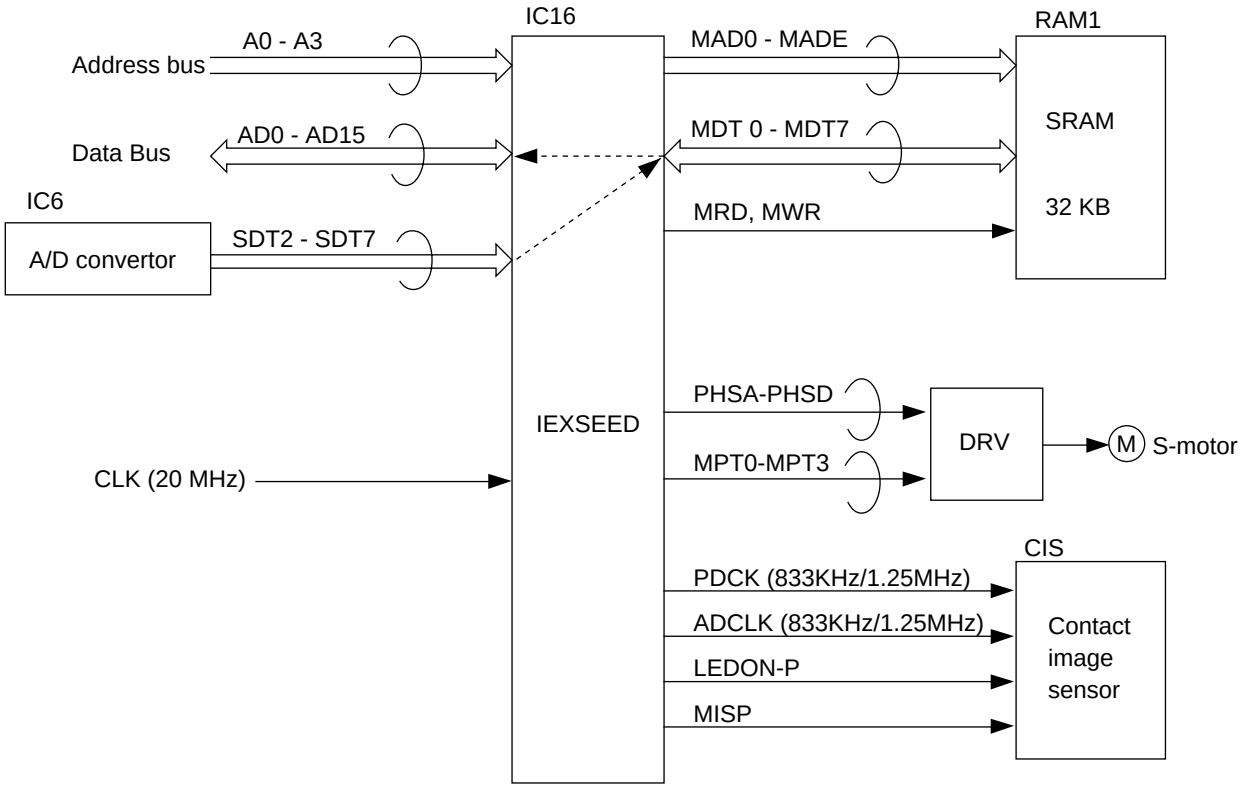


Figure A.17 Related Signals of IEXSEED

3.13 46F Circuit Diagram (13/13)

1. Block diagram
   46F-PCB circuit diagram (13/13) shown the consists of the ispLSI2032E-110LT44 (PLD: Programmable Logic Device) of IC22.

   Figure A.18 shows the related signals of PLD.

2. Functions
   - chip select decode : V34CS and MUPISCS signals are produced from NMDCS2 and A18 signals.
   - wait control : NMDWAIT signal is produced from MUPISRDY-N signal.
   - MUPIS-WR : MUPISWR signal is produced from WRL-N and CLK signal
   - AFXN : AFXN signal is produced from AFXN-I and PLD internal control signal.
   - High voltage PWN signal : DBPWM, CB1PWM, and CB2PWM output signals are produced respectively from DBPWM-P input signal and DBENP, CB1ON-P, and CB2ON-P signals.
   - DACK0 : DACK0-O signal is produced from DACK0-I signal.

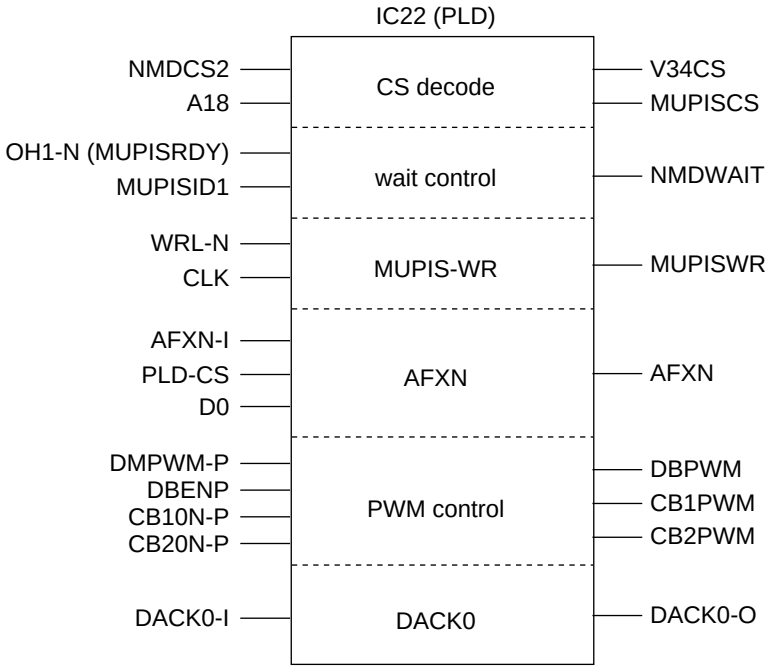


Figure A.18 Related Signals of PLD

4. R46 Circuit Diagram (OKIOFFICE87)

4.1 R46 Circuit Diagram (1/15, 2/15, 3/15)

1. Block diagram
   R46-PCB circuit diagram (1/15, 2/15, 3/15) shown the consists of an input/output gate array IC2 (IOGA6), crystal oscillator circuit and reset signal generator.
   Figure A.19 shown the block diagram of IC2 (IOGA6) and the peripheral circuits.

2. Function
   1) IOGA6 is newly developed LSI for scanning, printing control and provided with a built-in CPU.
      - IOGA6 contains the following functions:
      • Scanned data DMA control
      • Strobe signals control for LED head
      • Smoothing control for printing data
      • Interface of the peripheral LSI

      - CPU
      CPU controls the following functions in addition to the basic processor.
      • DMA (Direct Memory Access) control
      • Interrupt procedure control
      • A/D converter
      • Bus state control
      • Programmable pattern control
      • 16 bit integrated timer pulse unit (ITU)
      • Timing pattern control (TPC)
      • Serial communication interface (SCT)

   2) Crystal oscillator circuit
      X1 is 20MHz crystal oscillator. The output wave is fed to the CPU1 through pin 73 and 74.
      CLK (20MHz) signal output from pin 71 is used as the system clock.

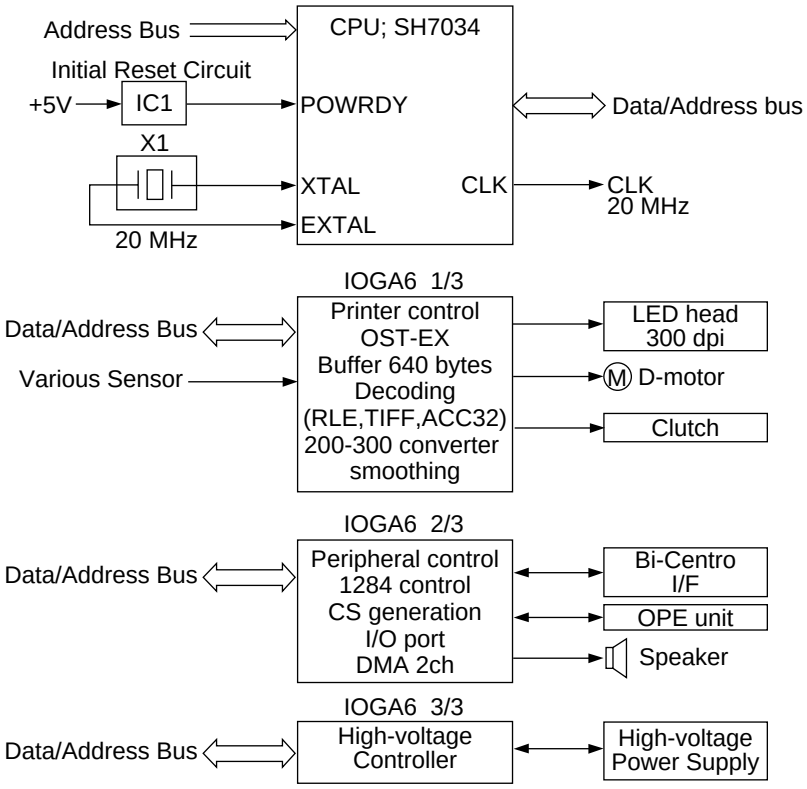


Figure A.19 Related Signals of IOGA6

4.2 R46 Circuit Diagram (4/15)

1. Block diagram
   R46-PCB circuit diagram (4/15) shown the consists of Flash memory, DRAM, Real time clock IC and Back up battery circuit.

   Figure A.20 shows the block diagram of Flash memory, DRAM and Real time clock.

2. Function
   1) Flash memory (FLS1)
      Flash memory (electrically erasable and programmable device) is used for the main software program, which is stored in EP-ROM of the current OKIFAX. Other than the function of EP-ROM, Flash memory is also used for the user data area instead of SRAM chips.

      • 1M Byte Flash memory × 1 (FLS1)
        Used for work area, report recording etc.

   2) DRAM
      RAM1: 8MB (2k words × 16 bit)
      • Used as follows:
        Picture memory for the ECM send/receive mode.
        Picture memory for the memory transmission mode.
        Picture memory for the retransmission mode.
        Picture memory for the reception in memory.
        Editing for report printing.

   3) Back-up battery circuit
      The non-rechargable lithium battery supplies voltage to a real-time clock IC at AC main interruption.

   4) Real-time clock IC (IC22)
      A real-time clock IC (serial I/F) incorporating a crystal osillator is used. Its basic frequency is 500 Hz. IC2 pins 217 (RTCCS), 216 (RTCWR), 215 (RTCDATA), and 214 (RTCCLK) are used as I/F signal pins.
      The drive voltage is 3V and backup by a dedicated lithium battery.

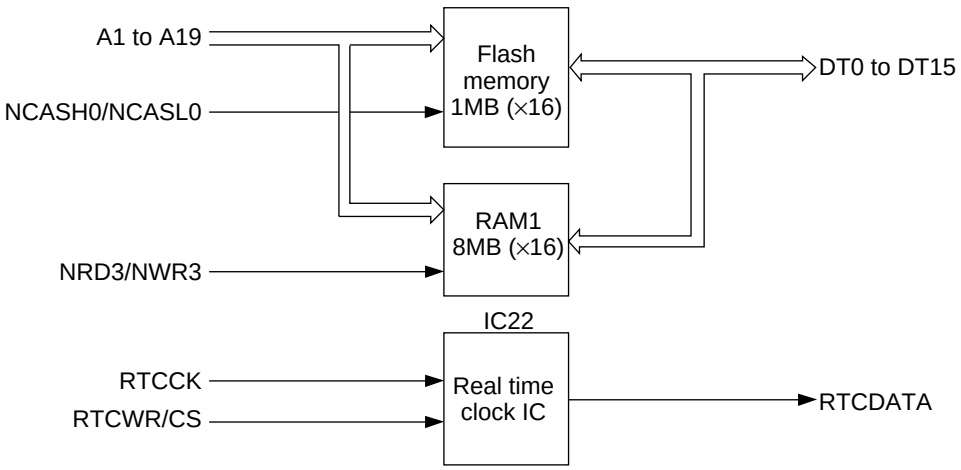


Figure A.20 Block Diagram of DRAM/Flash Memory and Real-time Clock IC

4.3 R46 Circuit Diagram (5/15)

1. Block diagram
   R46-PCB circuit diagram (5/15) shown the consists of IC8 (analog switch IC) and IC11 (amplifier) generates the following audio monitor.

   • Line monitoring
   • Buzzer signals

   Figure A.21 shows the block diagram of audio monitor circuit.

2. Function
   1) Line monitoring
      Send and receive signals are input from the transformer on the NCU board to this circuit as a R signal and the signal power is input to the IC8. The IC8 adjusts the monitor volume by MONC0, MONC1 and MONC2 signal under the control of IC2 (IOGA6). Output (high and low) from IC8 passes through the amplifier and is fed to the speaker as a SP signal.

      * MONC0/MONC1/MONC2 signal: Volume control signal.

      Note: In case of transmission mode, the monitor will be available during dialing, but the monitor will be switched off automatically after the elapse of specified time (about 5 sec).

   2) Buzzer control
      Alarm and other signals are input from IC2 (IOGA6) to this circuit as BZ signals. The various buzzer signals are sounded under the control of CPU1.

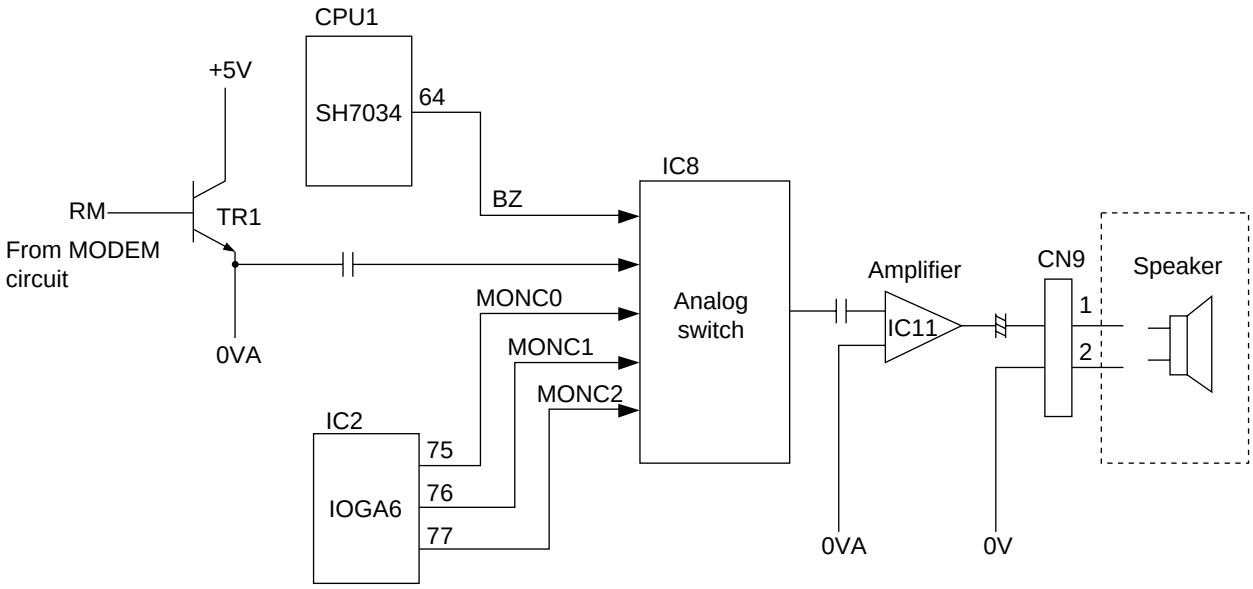


Figure A.21 Block Diagram of Audio Monitor Circuit

4.4 R46 Circuit Diagram (6/15)

1. Block diagram
   R46-PCB circuit diagram (6/15) shown the consists of Modem (33.6 kbps).

   Modem consists the following functions:
   - Modulation/demodulation
     Modulation type:
     1) ITU-T Rec. V34 (33600/31200/28800/26400/24000/21600/19200/16800/14400/12000/9600/7200/4800/2400 bps) for G3 picture data.
     2) ITU-T Rec. V17 (14400/12000/9600/7200 bps) for G3 picture data.
     3) ITU-T Rec. V29 (9600/7200 bps) for G3 picture data.
     4) ITU-T Rec. V27 ter (4800/2400 bps) for G3 picture data.
     5) ITU-T Rec. V21 channel 2 (300 bps) for binary signals defined in ITU-T Rec. T.30.
   - Automatic adaptive equalizer for G3 receive data with 300 bps data excluded.
   - Generation of signal tones
   - PB tone (multi-frequency tone) generation
   - Detection of single tones
   - D/A converter for send data (TX)
   - A/D converter for receive data (RX)
   - Amplitude equalizer for RX
   - Selectable attenuation for TX
   - Automatic gain control

   Figure A.22 shows the related signals of Modem.

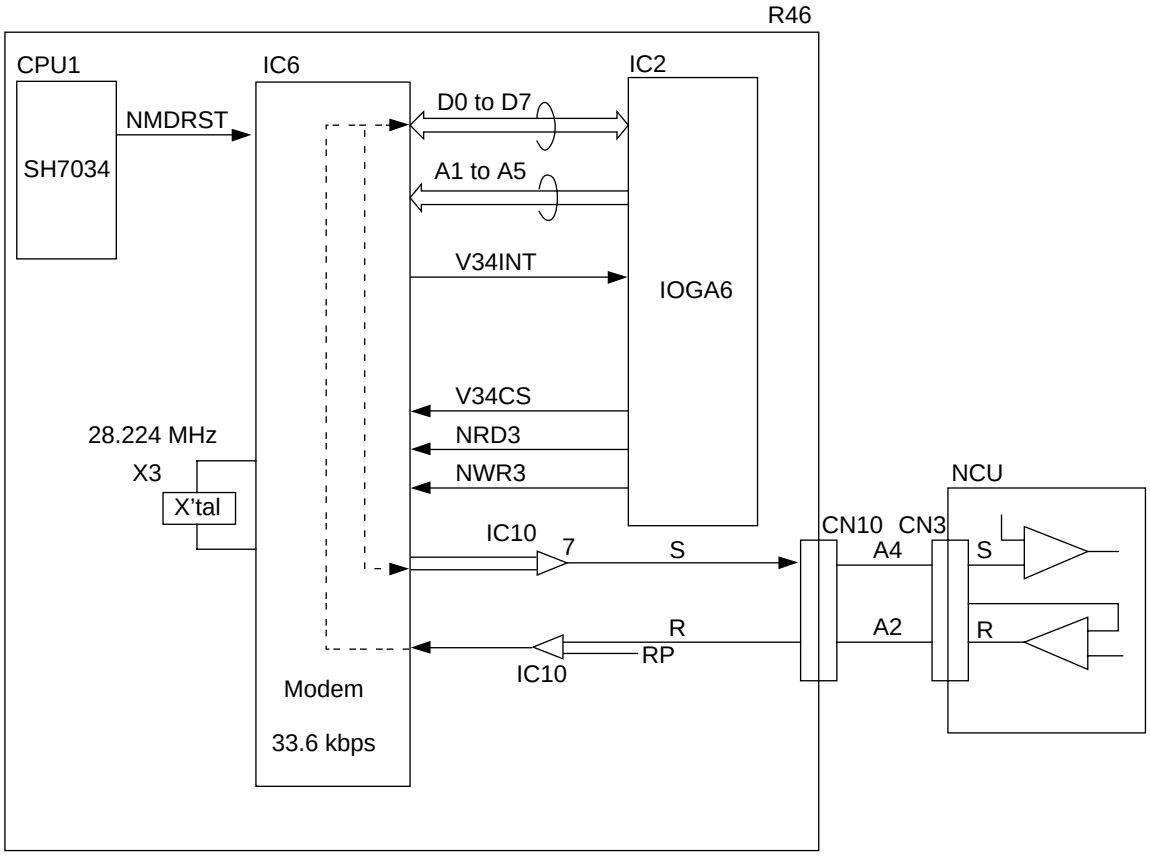


Figure A.22 Related Signals of Modem

4.5 R46 Circuit Diagram (7/15)

1. Block diagram
   R46-PCB circuit diagram (7/15) shown the consists of connector CN12 that provides an interface between R46 board and LED print head.

   Figure A.23 (1/2) shows the related signals and block diagram of LED print head.

2. Function
   Data of 4992 LEDs on the LED print head is loaded into the shift registers by the HCLCK signal. After the 4992 bit (208 mm) data is loaded in the shift registers, it is then loaded in the latch circuit by the HLATCH signal. The turning -on and off of the LEDs are controlled by STRB1-N to STRB4-N signals.

   LED head interface signals output from IC2 (IOGA6)
   - HDD0~3 : Print data i.e., data to be printed
   - HDCLK : Transfer clock for print data
   - HDDLD : Latch signal for print data
   - HDSTB1~4 : LED head strobe signals

3. Signal timing
   Figure A.23 (2/2) shows the timing chart of LED print head.

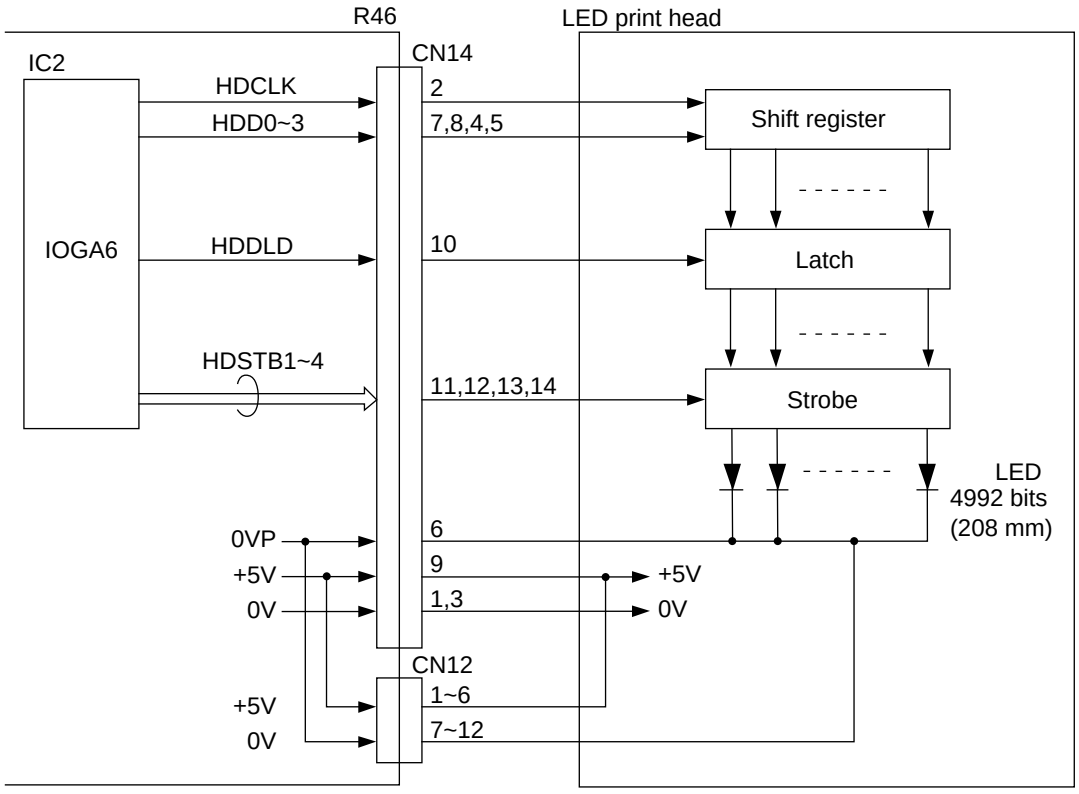


Figure A.23 Related Signals and Block Diagram of LED Head

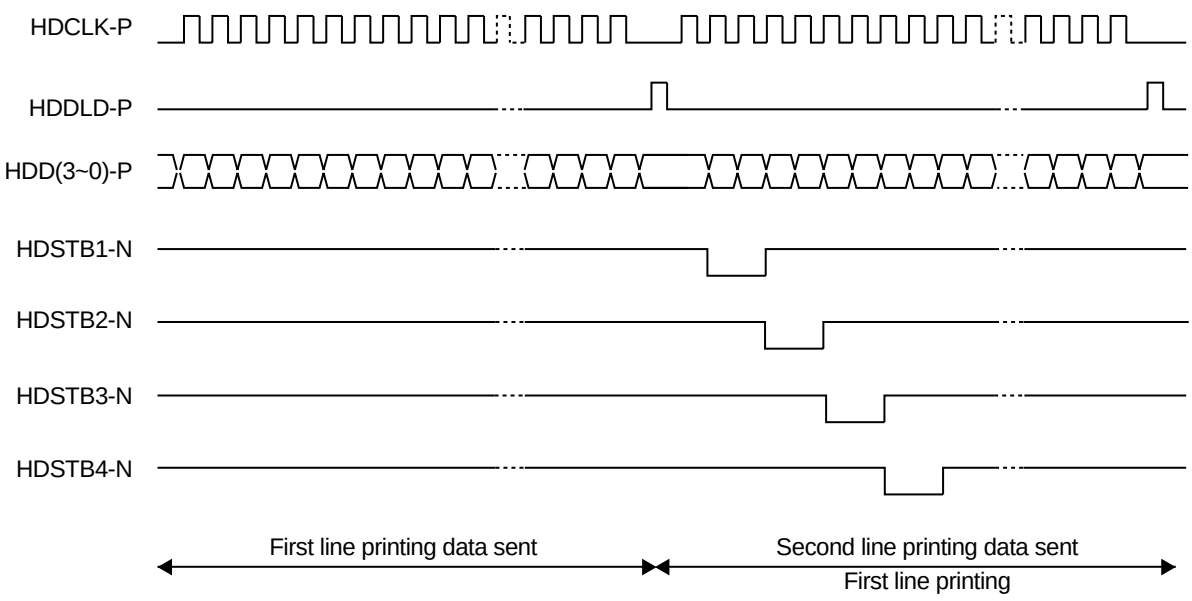


Figure A.23 (2/2) Normal Mode Printing Timing Chart

4.6 R46 Circuit Diagram (8/15, 9/15)

1. Block diagram

   R46-PCB circuit diagram (8/15, 9/15) shown the consists of the following connectors:
   - Connector CN10 that provides an interface between R46 board and NCU/G4N board.
   - Connector CN3 that provides an interface between R46 board and external electro-mechanical conponents (PC1 and PC2).
   - Connector CN4 that provides an interface between R46 board and OPE (O4W) unit.

   Figure A.24 (1/4) shows an interface between R46 board and NCU board.
   Figure A.24 (2/4) shows an interface between R46 board and OPE unit.
   Figure A.24 (3/4) shows the communication signal between MCNT and OPE.
   Figure A.24 (4/4) shows the related signals of PC1 and PC2.

2. Function

   1) External status supervising interface (PC1/PC2)

      External status is detected by the photocouplers (PC1/PC2) in the mechanism and the signal is output to the input port of CPU1 via this interface circuit.
      - PC1 : Presence of document on hopper.
        When sub-power supply is applied to the fax machine, this signal is output to OPE unit which will control the main-power supply.
      - PC2 : Presence of document at scanning position.

3. Others

   NCU interface signal
   - CML : Line seizure control signal
   - DP : Dial pulse control signal
   - SR : Control signal for connection between LINE and TEL terminals
   - MUTE : Control signal for pulse dial improvement and bell shunt relay
   - PP : Relay control signal for special service code detection at parallel pickup or remote reception
   - PBXE : Control signal for connecting one of LINE terminal to the PBXE terminal
   - OH2-N : Detection of off-hook of terminal connected to TEL
   - RP : Receiving sensitivity determination terminal
   - RI : Ringing detection signal
   - S : Send signal (picture data/protocol/tonal signals/PB tone etc.)
   - R : Received signal (picture data/protocol/tonal signals etc.)

   OPE interface signals
   - TXDOPE : This signal transmits sequencially the contents of each data of TXD (LED on/off information, etc.) to OPE in serial data from CPU.
   - RXDOPE : This signal transmits sequencially the contents of each data of RXD (key code information, etc.) to CPU in serial data from OPE.
   - OPECHK : Use to monitor the operation of the OPE unit.
   - OPERST : Reset signal for OPE unit

   G4N interface signals
   Refer to section 9.

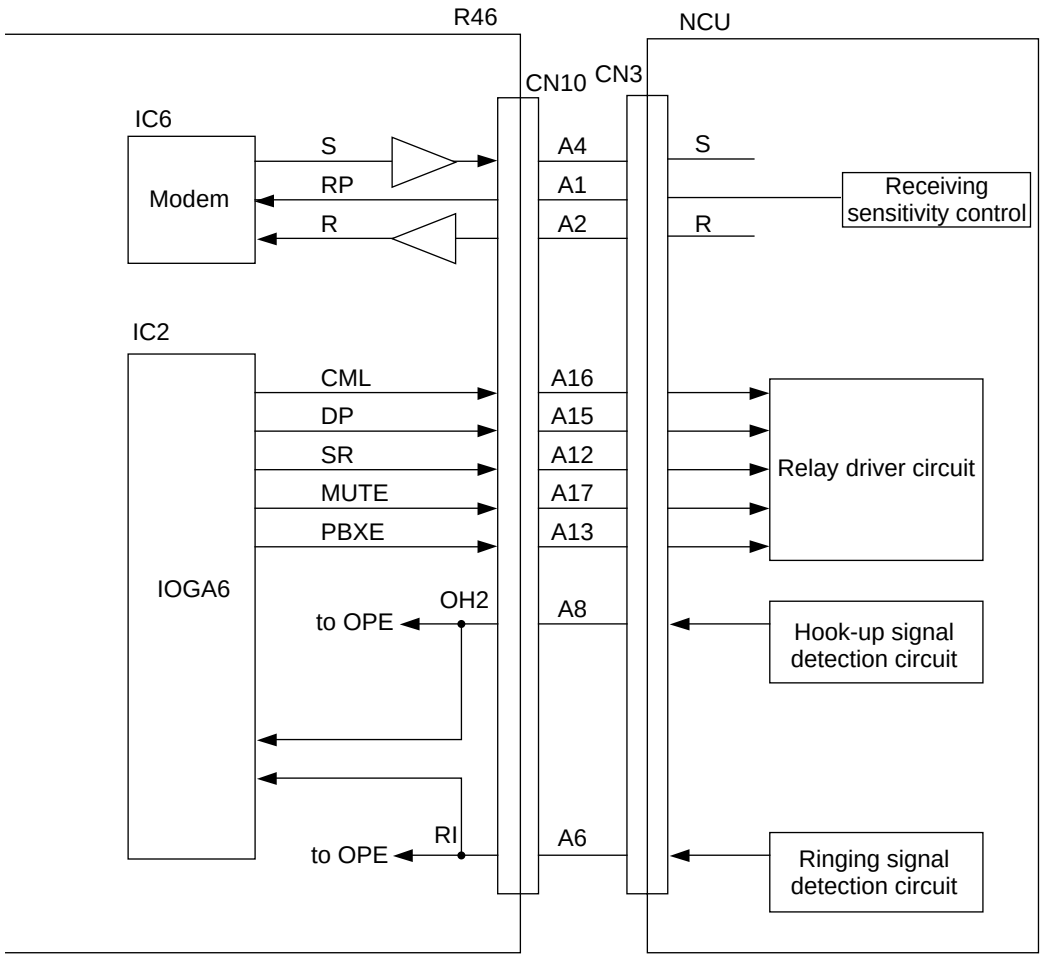


Figure A.24 (1/4) Interface between R46 Board and NCU Board

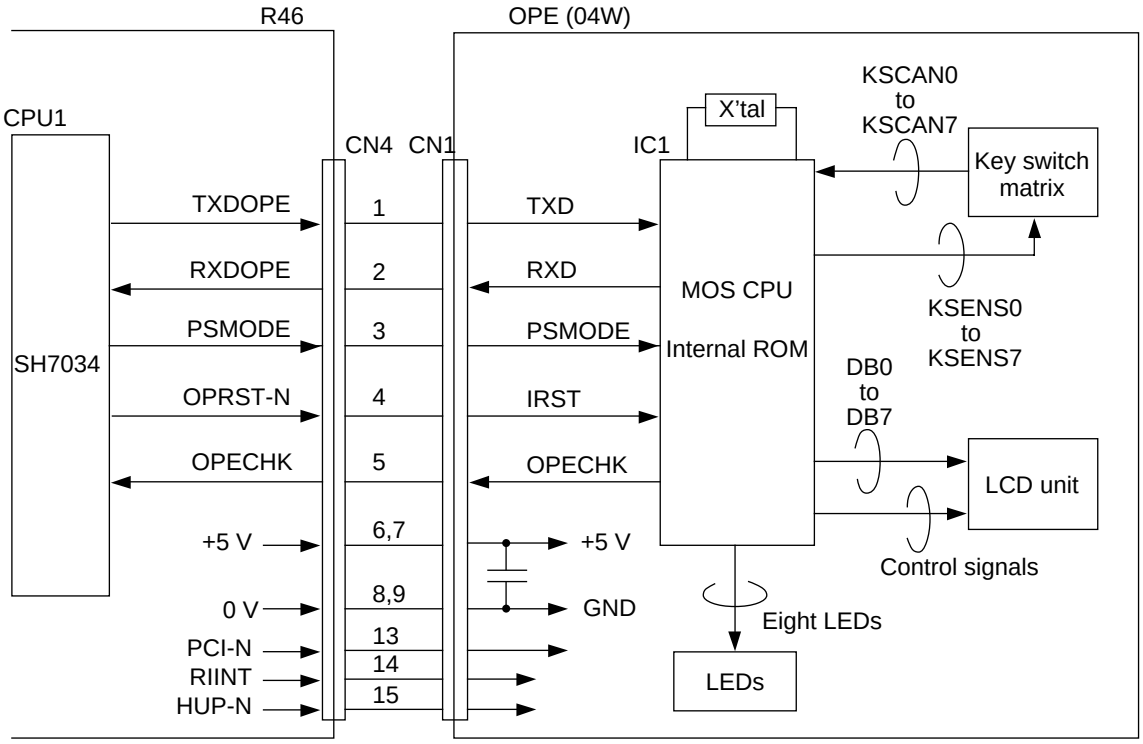


Figure A.24 (2/4) Interface between R46 Board and OPE (operation unit)

Between the MCNT and OPE, serial data is transferred via the SIO incorporated in the CPU1.

<Communication method>

1) Communication method : Start-stop synchronization
2) Transfer rate : 5832 bps
3) Data length : 8 bits

<Data configuration>

1) Status bit : 1 bit
2) Data : 8 bits
3) Even parity : 1 bit (ignored by OPE)
4) Stop bits : Bits 1 and 5
   Error = ±5%

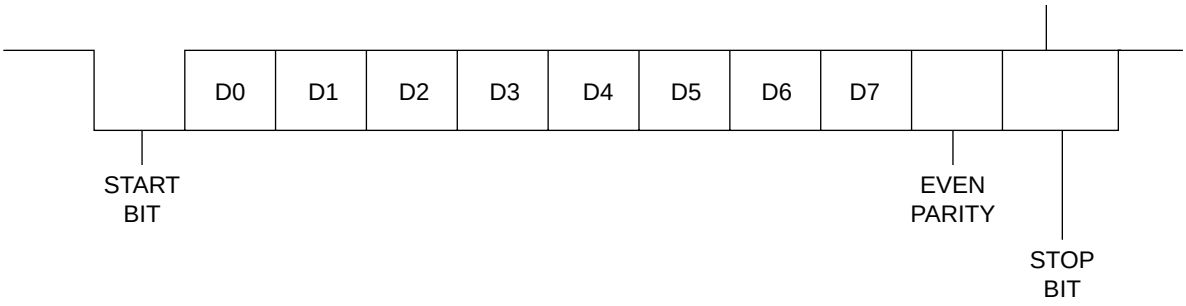


Figure A.24 (3/4) Communication signal (TXDOPE/RXDOPE) between MCNT and OPE

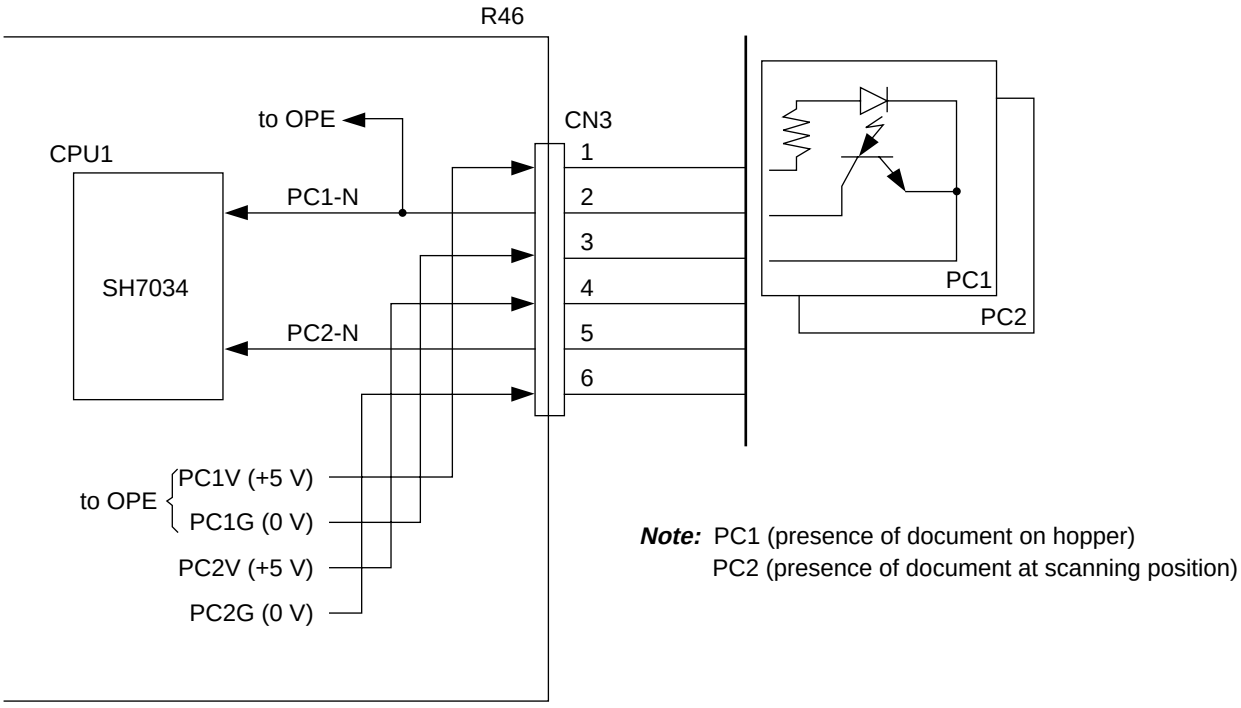


Figure A.24 (4/4) Related Signals of PC1/PC2

4.7 R46 Circuit Diagram (10/15)

1. Block diagram
   R46-PCB circuit diagram (10/15) shown the consists of the following functions and connectors:
   • IC9 (Drum motor driver)
   • Connector CN13 that provides an interface between R46 board and the drum motor.

   Figure A.25 shows the related signals of the drum motor.

2. Function
   1) Drum motor control

      This drum motor is driven by the motor driver IC9. It is two-phase excited and bipolar-driven according to the DMPH1, DMPH2 and DMON1-N signals that are generated from the IOGA4 (CPU). This drum motor rotates the image drum.

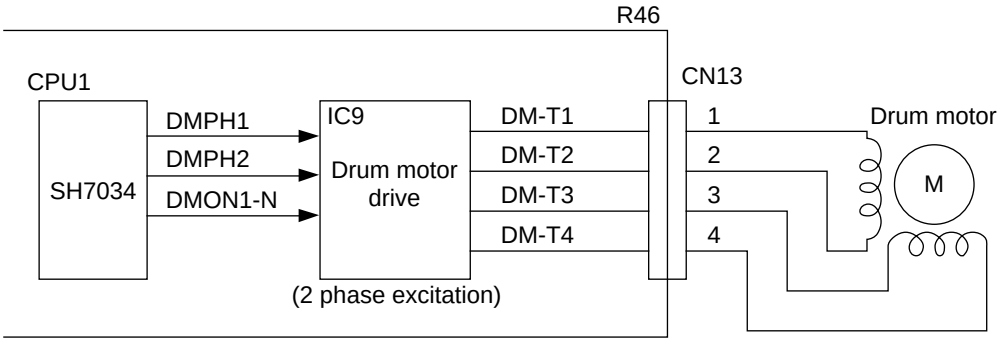
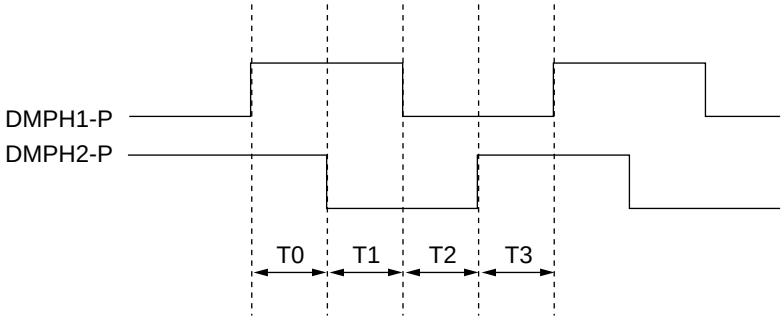


Figure A.25 (1/2) Related Signals of Drum Motor

   2) Drum motor timing chart



Operation at normal speed: T0 to T3 = 0.781 ms

Figure A.25 (2/2) Drum motor signal timing chart

   3) Drive control
      Time T0 to T3 determines the motor speed, while the difference of phase direction between phase signals DMPH1-P and DMPH2-P determines the rotation direction, DMON1-N signals control a motor coil current. According to the polarity of the phase signal, the coil current flow as follows:

      1) +38V → SW → motor coil → SW → resistor → earth, or,
      2) +38 → SW → motor coil → SW resistor → earth

      The voltage drop across the resistor is input to comparator, where it is compared with a reference voltage. If an overcurrent flow occurs, a limiter operates to maintain it within a certain fixed amount of current.

4.8 R46 Circuit Diagram (11/15)

1. Block diagram
   R46-PCB circuit diagram (11/15) shown the consists of the following function and connectors:
   • IC7 (Send motor driver)
   • TR505/TR506 (Clutch driver)
   • Connector CN1 that provides an interface between R46 board and the send motor.
   • Connector CN2 that provides an interface between R46 board and the clutch.

   Figure A.26 (1/2) shows the related signals of the send motor and clutch.
   Figure A.26 (2/2) shows the timing chart of send motor.

2. Function
   1) Send motor rotation and chopper control
      Send motor drive signals are generated by the IC2(IOGA6) and output to send motor via IC7 (motor drive IC) of this circuit.

      Note: The built-in motor control circuit of IC2(IOGA6) consists of the following blocks:
      - Setting of the excitation operation
      - Setting of the chopping operation
      - Setting of the motor excitating method (1-2/2-1 phase excitation)

      a) Send motor rotation control
         There are several cases of the rotation operation:
         Forward rotation for feeding documents.
         - Case 1: Feeding document from hopper to the position where one line data is read.
         - Case 2: Feeding document while reading.
         - Case 3: Feeding document after a page has been read.

      b) Send motor chopper control
         The purpose of chopper control is to reduce the current to the motor by setting the phase signal on and off intermittently when a time lapse exceeding a specific time occurs without a phase update.

   2) Clutch
      When starting to print, performs the paper supply of recording paper by using this clutch. Clutch is driven by clutch signal generated from CPU1.

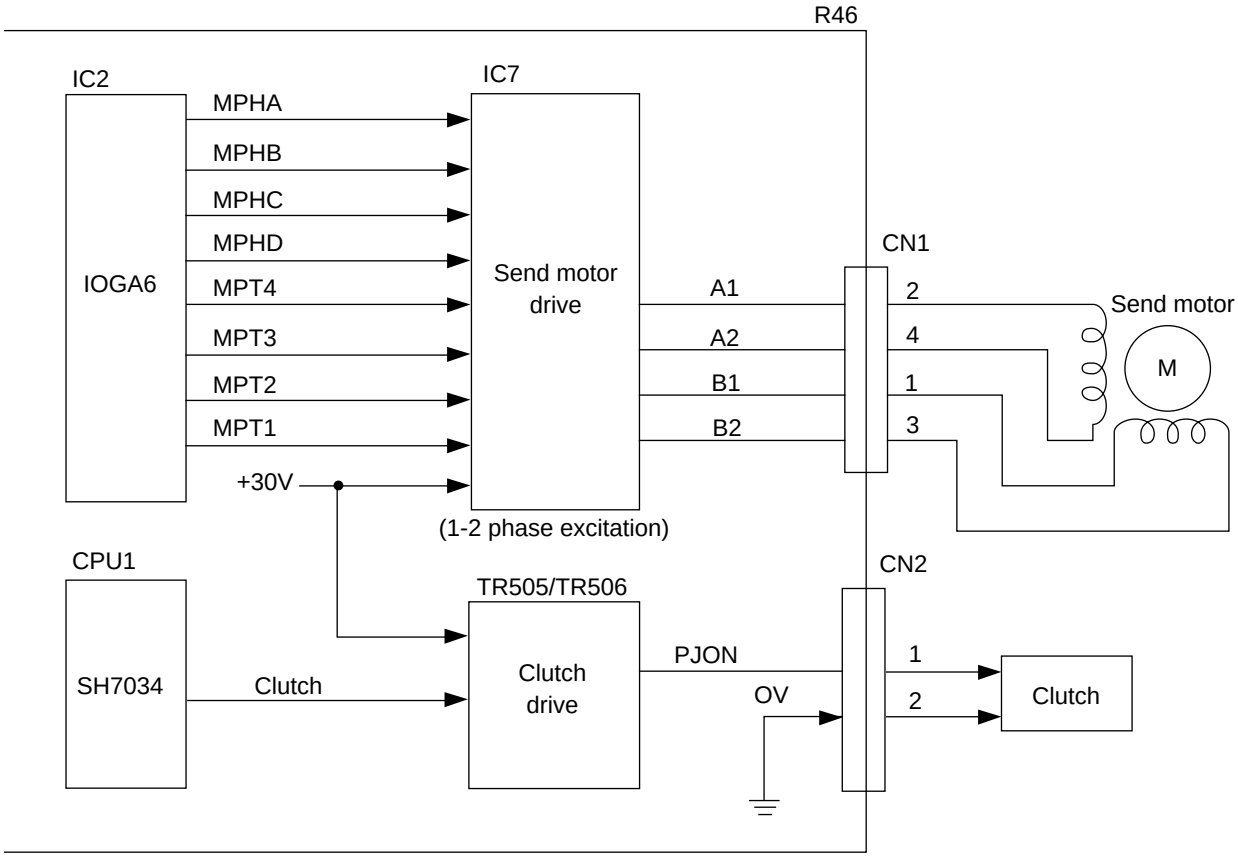


Figure A.26 (1/2) Related Signals of Send Motor and Clutch

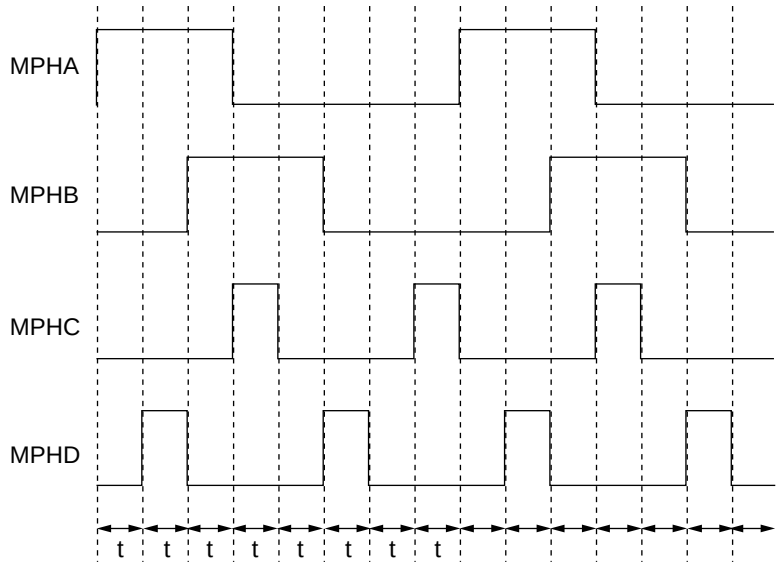


Figure A.26 (2/2) Timing Chart of Send Motor

4.9 R46 Circuit Diagram (12/15)

1. Block diagram
   R46-PCB circuit diagram (12/15) shown the consists of the following connectors.
   • Connector CN11 that provides an interface R46 board and Bi-Centro I/F.

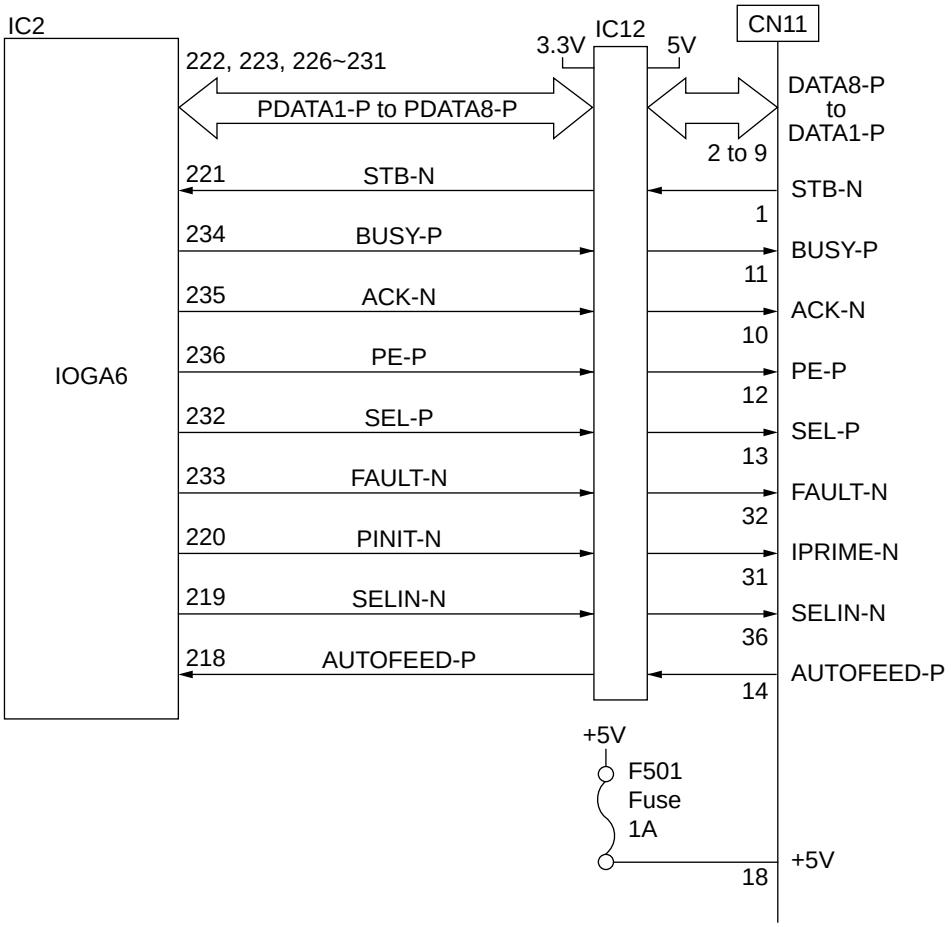


Figure A.27 (1/2) Interface between R46 Board and Bi-Centro I/F

The LSI sets a BUSY-P signal to ON at the same time when it reads the parallel data (PDATA1-P to PDATA8-P) from the parallel port at the fall of STB-N signal. Furthermore, it makes the store processing of receiving data into a receive buffer terminate within a certain fixed time and outputs an ACK-N signal, setting the BUSY-P signal to OFF.

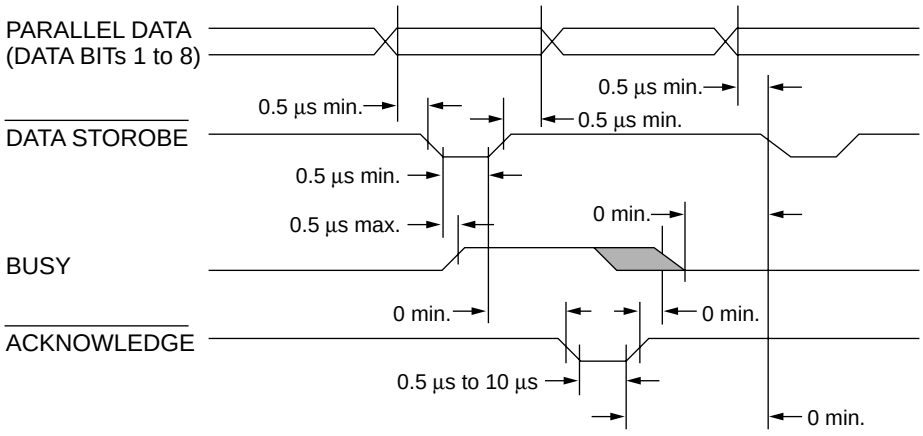


Figure A.27 (2/2) Timing Chart of Centronics Parallel Interface

4.10 R46 Circuit Diagram (13/15)

1. Block diagram
   R46-PCB circuit diagram (13/15) shown the consists of the following connector:
   - Connector CN6 that provides an interface between R46 board and power supply unit (P2H).
   - Connector CN7 that provides an interface between R46 board and power supply unit (MPW1446/MPW1546).
   - Connector CN8 that provides an interface between R46 board and power supply unit (P6L).

2. Function
   1) Sensor and switch control
      Five types of sensors are used in the printer as listed below. All of their output enter IOGA6 ports for referring to and processing by the IC2(IOGA6).
      Figure A.28 (1/4) shows sensors and switch control.

      - Inlet sensor 1
      - Write sensor (To detect the paper top position for printing)
      - Outlet sensor
      - Toner end sensor
      - Cover status switch

      The functions of various sensors are described in the following table.

Table A.2 shows the method of toner low detection

Sensor Type	Sensor Name	Function
PSIN-N	Inlet sensor	This photosensor is positioned before the resist roller to detect whether the paper has entered into the printer section.
WRSNS-N	Write sensor	Detects the arrival of paper at designated position on the paper transport route inside the printer in order to turn on the light of the LED head. 0: Paper exists, 1: Paper does not exist
PSOUT-N	Outlet sensor	Located at the exit of the printer to supervise the paper exit operation. 0: Paper exists, 1: Paper does not exist
TNRSNS-N	Toner sensor	Detects the remaining toner in the toner cartrige. "The length of time of low-toner state within fixed time interval" detects a low-toner state.
CVOPN-N	Cover open sensor	Detects whether the cover of the printer section is open or not. 0: Cover is open, 1: Cover is close

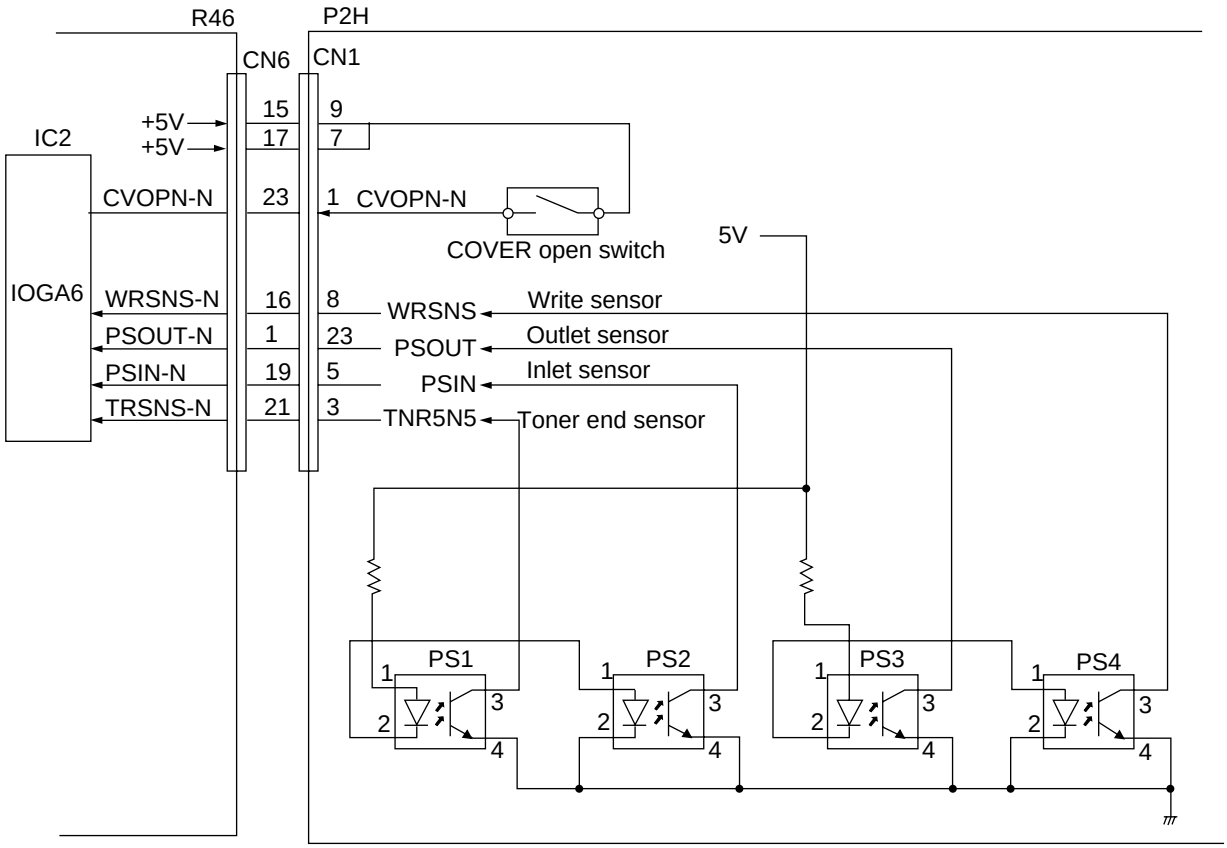


Figure A.28 (1/4) Sensor and Switch Control

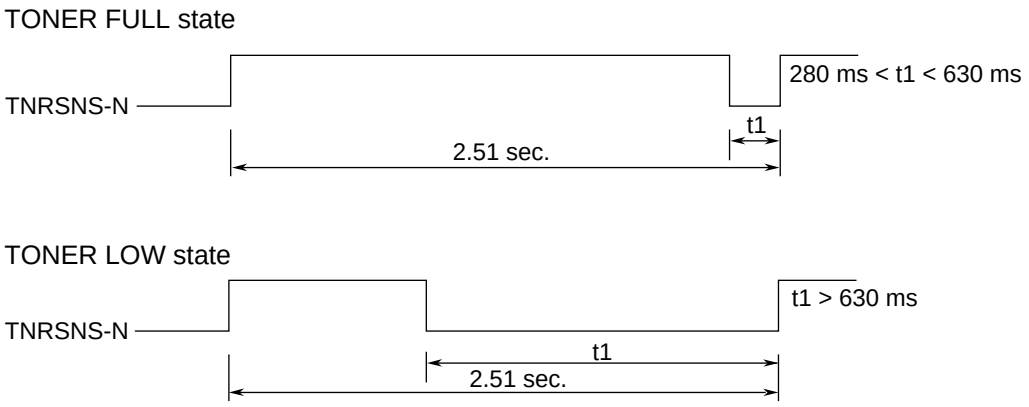


Figure A.28 (2/4) Method of Toner Low Detection

- When the Toner Low state is detected 2 times consecutively, Toner Low is established.
- When the Toner Full state is detected 2 times consecutively, Toner Low is cancelled.
- When there is no change with the toner sensor for 2 cycles (2.51 sec. × 2) or more, then the Toner Sensor Alarm is activated.
- The toner sensor is not monitored while the main (drum) motor is in a halt.

2) Fuser unit temperature control

The heater in the fuser unit is controlled by the thermister, IC2(IOGA6) keeps the heater roller surface within a prescribed temperature range. The CPU1 supervises the status of THCHK (A/D converter input section) periodically, turning HEATON signal on and off according to CPU1 of THCHK status to exercise temperature control.

At power on time, the CPU1 switches the output signal THON from pin 65 (between high and low states) to check for a blown or shorted thermister according to the status of the THCHK signal.

A built-in thermostat in the fuser unit prevents the heater from being overheated in event of failures in the thermister, or temperature control circuit, etc.

Figure A.28 (3/4) shows the fuser unit temperature control.

Note: Heater control

Temperature of the heater at the time of printing is 150˚C to 180˚C. This temperature is maintained by controlling the on and off operation of heater according to the input of the thermister converted into analogue-digital (A/D) values by the CPU1.

2)-1 Heater control

The ACON control signal on the secondary side is transmitted to the primary side via PC4 to turn triac TRA1 for AC voltage supply to the heater.

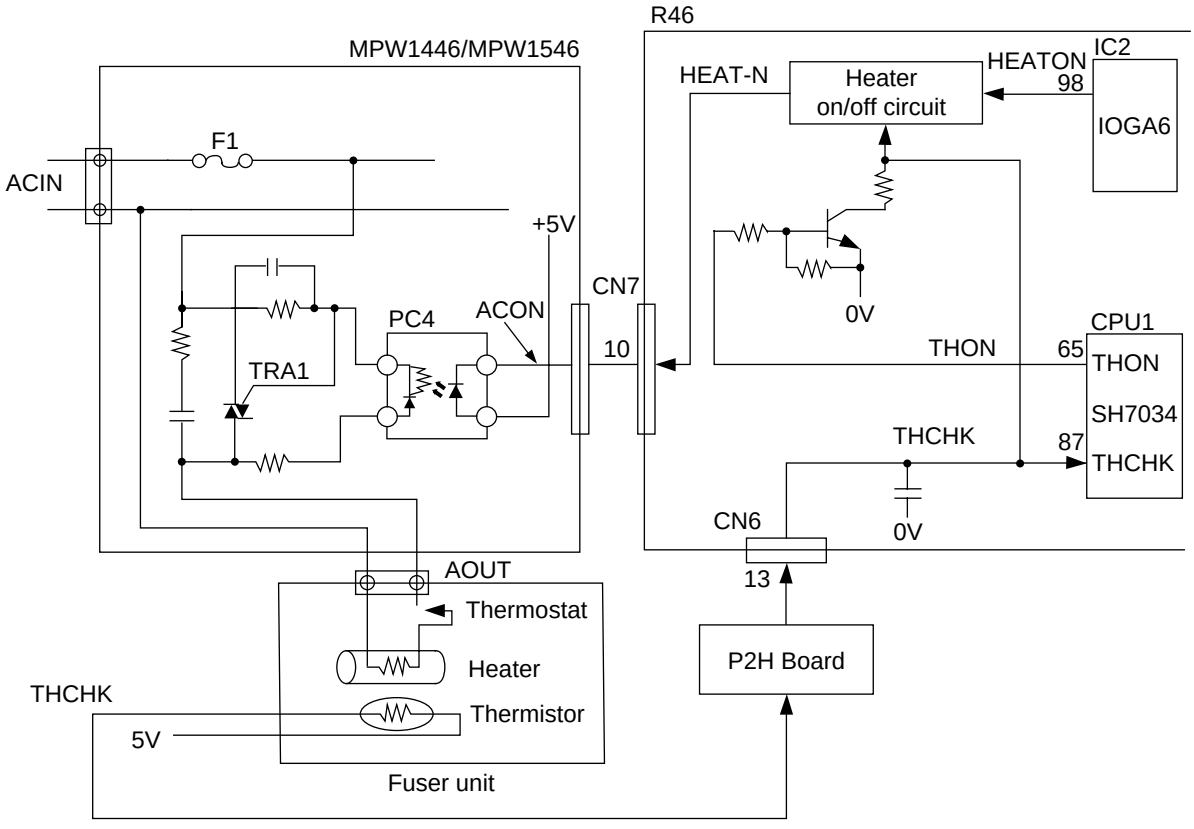


Figure A.28 (3/4) Fuser Unit Temperature Control

3) High-voltage and medium-voltage control

High voltages are activated by IC2(IOGA6) and generated by the high-voltage circuit inside the power supply unit. The CH (charge) voltage of about -1.30kV is used for the charge roller. The TR1/TR2 (transfer) voltage of about +3.9kV/-0.75kV is used for the transfer roller.

Medium voltages are activated by IC2(IOGA6) and generated by the medium-voltage circuit inside the power supply unit. The SB1/SB2 (toner supply) voltage of about +0V/-450V is used for the toner supply roller. The DB1/DB2 (developing) voltage of about +265V/-265V is used for the developing roller. The CB (cleaning) voltage of about +400V/-1.35kV is used for the cleaning roller.

Figure A.28 (4/4) shows high/medium voltages control.

* Signals used to control the high/medium-voltages are listed below.

Signal Name	Description
CHON	"1": CH is output. (-1.30kV)
DBON1	"1": + ive polarity voltage of DB/SB is output. (+265V)
DBON2	"1": - ive polarity voltage of DB/SB is output. (-265V)
TRON1	"1": + ive polarity voltage of TR is output. (+3.9kV)
TRON2	"1": - ive polarity voltage of TR is output. (-0.75kV)
CB1ON	"1": + ive polarity voltage of CB is output. (+400V)
CB2ON	"1": - ive polarity voltage of CB is output. (-1.35kV)

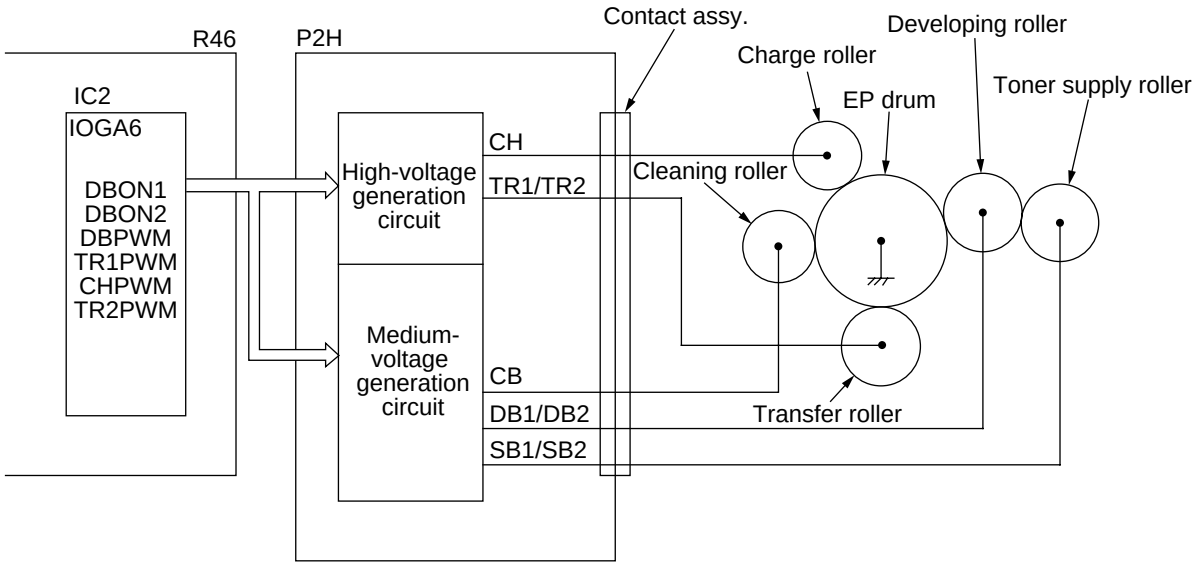


Figure A.28 (4/4) High/Medium Voltage Control

4.11 R46 Circuit Diagram (14/15)

1. Block diagram
   R46-PCB circuit diagram (14/15) shown the consists of the LC821033 (image processing LSI) of IC13.

   Figure A.29 shows the related signals of LC821033.

2. Functions
   LC821033 is developed LSI for the image processing.
   LC821033 contains the following functions:
   • Contact image sensor driver
   • Line buffer control

   LC821033(Image LSI) Specifications
   The analog image data from the image sensor is amplified about 4.3 times in the external non-reverse amplifier circuit and the amplified analog data is input to this LSI chip. In this LSI chip, the analog data is converted to digital data by the built-in A/D converter and the digital data is corrected by the internal correction function, thus sending binary-coded data to the IOGA6 every eighth pixel normally. When contrast is corrected, multi-valued data is sent for each pixel. When horizontal scanning lines are skipped, a request is suppressed every three requests. A sensor drive signal (CLK1) and motor synchronizing signal (SH) are output to the image sensor.

   The timing of data transfer to/from the IOGA6 is shown below.

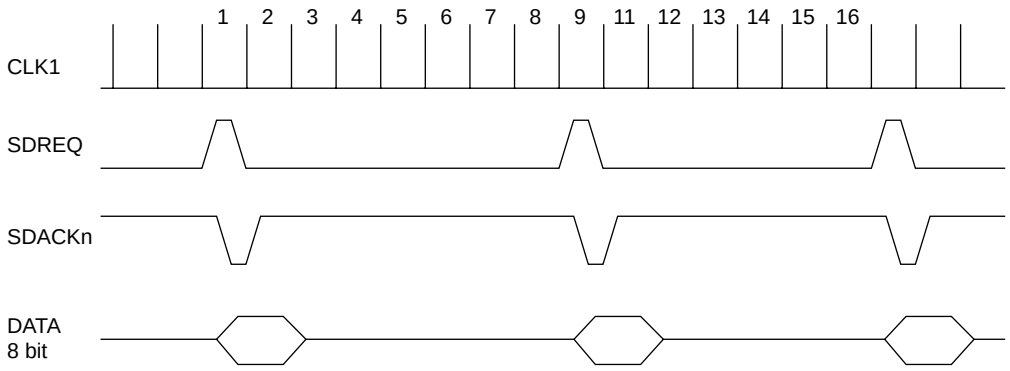


Figure A.29 Timing Chart of LC821033

4.12 R46 Circuit Diagram (15/15)

1. Block diagram
   R46-PCB circuit diagram (15/15) shown the consists of the following functions:
   • Connector CN5 that provides an interface between R46 board and CIS (contact image sensor).

   Figure A.30 (1/2) shows the related signals and block diagram of CIS.

2. Function
   One-line picture data is read in the sequence from the scanning unit (CIS) as SIG signal (analog data) to IC13. Here, the picture data undergoes various kinds of picture processings.

   Sensor interface signal output from IC13(LC821033)
   • LEDON : LED on/off control signal
   • SNSCLK : Scanning sensor drive clock (2.5 MHz)
   • MISP : Scanning synchronous signal (1.25 msec)

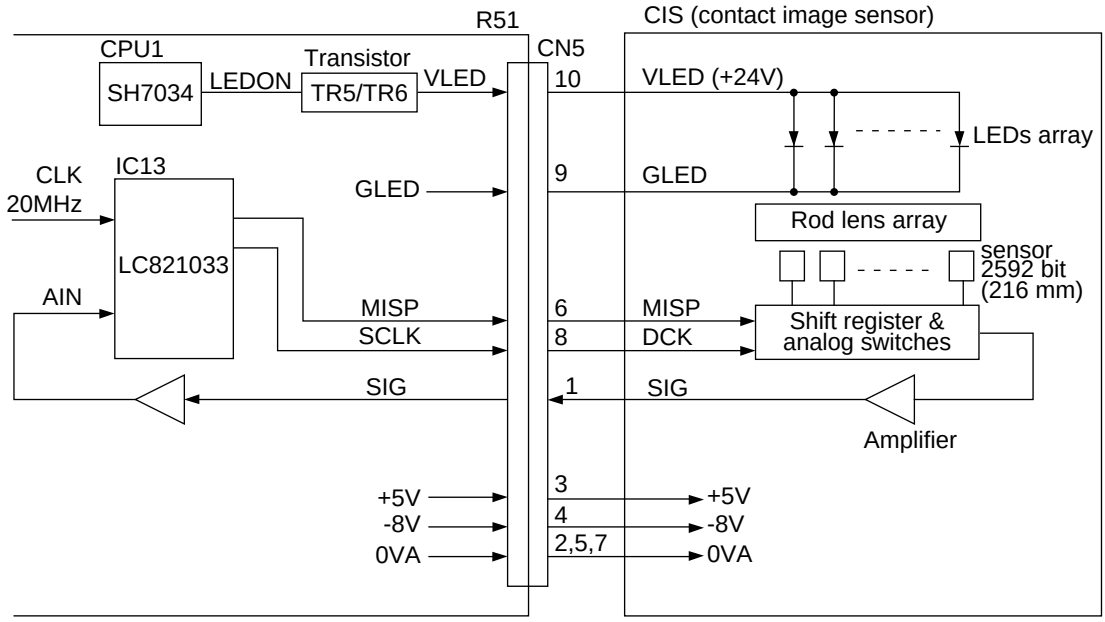


Figure A.30 (1/2) Related Signals and Block Diagram of CIS (Contact Image Sensor)

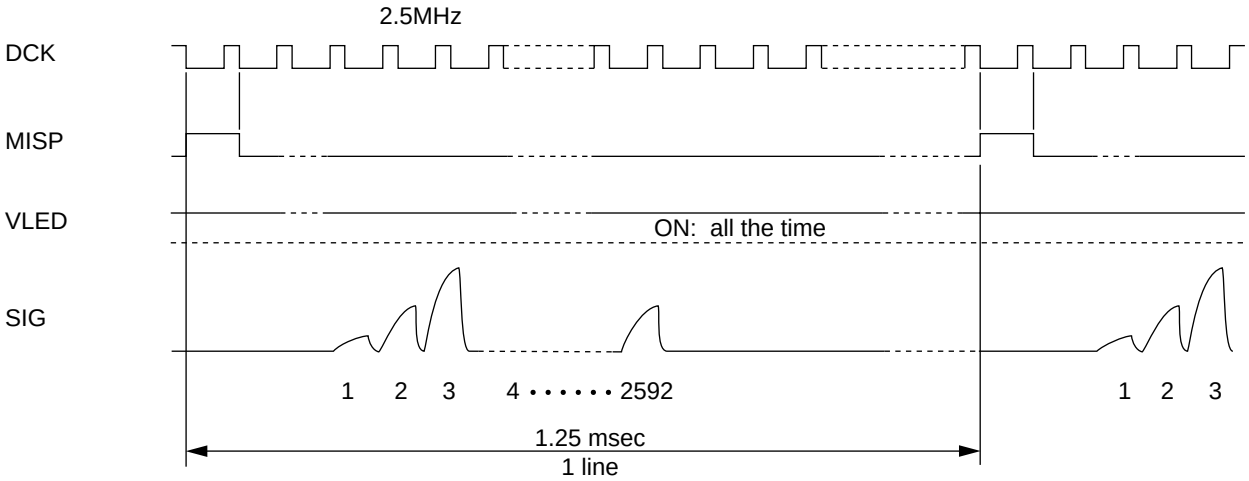


Figure A.30 (2/2) Signal Timing of CIS (Contact Image Sensor)

5. OPE (04W) Circuit Diagram

1. Block diagram
   Figure A.31 shows a block diagram of OPE (04W).

   The 04W (operation unit) circuit consists of the following blocks:

   1) IC1 (one chip MOS-CPU)

      • Output ports
        Setting LEDs on and off: 8 ports
        Specifies the row during key switch matrix scanning: 8 ports
      • Input ports
        Detect the column whose key is pressed: 8 ports

   2) Key switch matrix (8 rows x 8 columns)

   3) LEDs (8 LEDs)

   4) LCD unit

2. Key switch scanning
   Output ports (KSCAN0 to KSCAN7 signal) corresponding to 8 rows of key matrix are scanned sequentially by the software. In the case 1 is any of output from KSCAN0 to KSCAN7 signal which corresponds to the row 8 in the block diagram, the software reads input port, KSENS0 to KSENS7, and determines which in the row 8 is pressed.

3. LED drives and LEDs
   Eight LEDs (ALARM, PHOTO, LIGHT, etc.) on the control panel are driven by output of IC1 via resistors R1, R4-9 and R11 respectively. An LED lights on when a port output is 1.

4. In case sub-power supply is applied to the fax machine: when PC1-N, HUP-N or RIINT signal is input to OPE unit, OPE unit controls the main power supply (TLHV board) by outputting the MP/OFF (ACON) signal.

   • PC1-N: Presence of document on hopper
   • HUP-N: OFF-Hook detection for TEL 1 and TEL 2 terminal
   • RIINT: Ringing detection signal

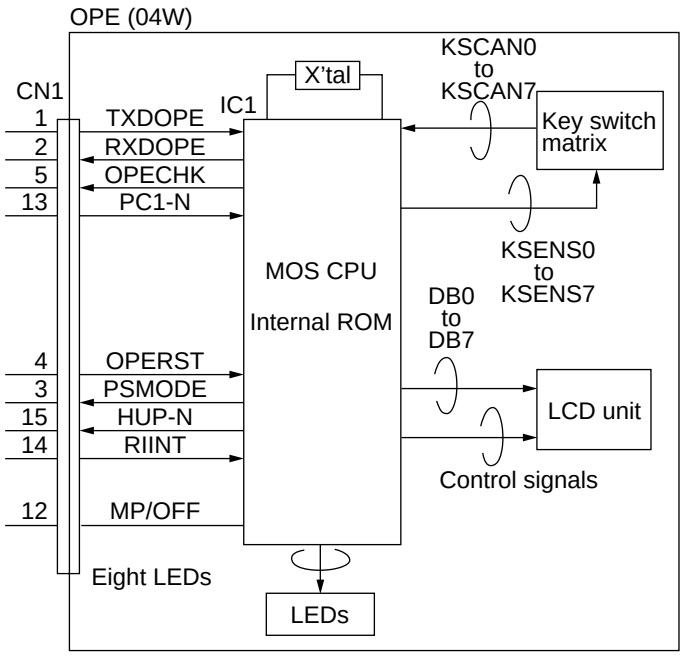


Figure A.31 Block Diagram of OPE (Operation Unit)

6. Power Supply Unit

6.1 MPW1446 (230V)/MPW1546 (120V) Circuit Diagram

IMPORTANT:
Oki Data Corporation recommends that maintenance of the Power supply unit (MPW1446 (230V)/ MPW1546 (120V)) be performed by replacement of a unit, not by replacement of components.

Therefore,
1) circuit descriptions in this section are for reference.
2) orders for components of the power supply unit cannot always be accepted.

Functions of unit:
The circuit generates the following direct currents (DC) based on the alternating current,
AC 120 V+6%, -15%
AC 230 V+15%, -14%

1. Low-voltage power supply circuit

   This circuit generates the following voltages.

2. Input ratings

Output Voltage	Output Voltage
+5V	Logic circuit supply voltage (IC, LSI), and high-voltage source voltage
-8V/+24V	CIS (contact image sensor)
+26V	Send motor, drum motor and clutch

• Voltage : AC 120 V +6%, -15% (AC 102 V to 127 V)
AC 230 V +15%, -14% (AC 198 V to 264 V)

• Frequency : 50 Hz/60 Hz +/-2%

3. Output ratings

Pin No. CN003	Rated Voltage	Rated Current	Current Range	Voltage Range	Output Ripple	Output Noise
2, 3	+5V	1.5V	0.2~4.4A	+4.9~+5.3V	100mV	250mV
8	+26V	1.3V	0~1.3A	+26~+40V	500mV	
1	+24V	0.2V	0~0.2A	+22.8~+25.2V	50mV	100mV
9	-8V	0.1V	0~0.1A	-6.5~-12.0V	100mV	250mV
12	+5VS	20mA	15~50mA	+5.0~5.4V	100mA	250mA

4. Block diagram

   Figure A.32 shows a block diagram.

   * The information contained herein can change without notice owing to product and/or technical improvements.

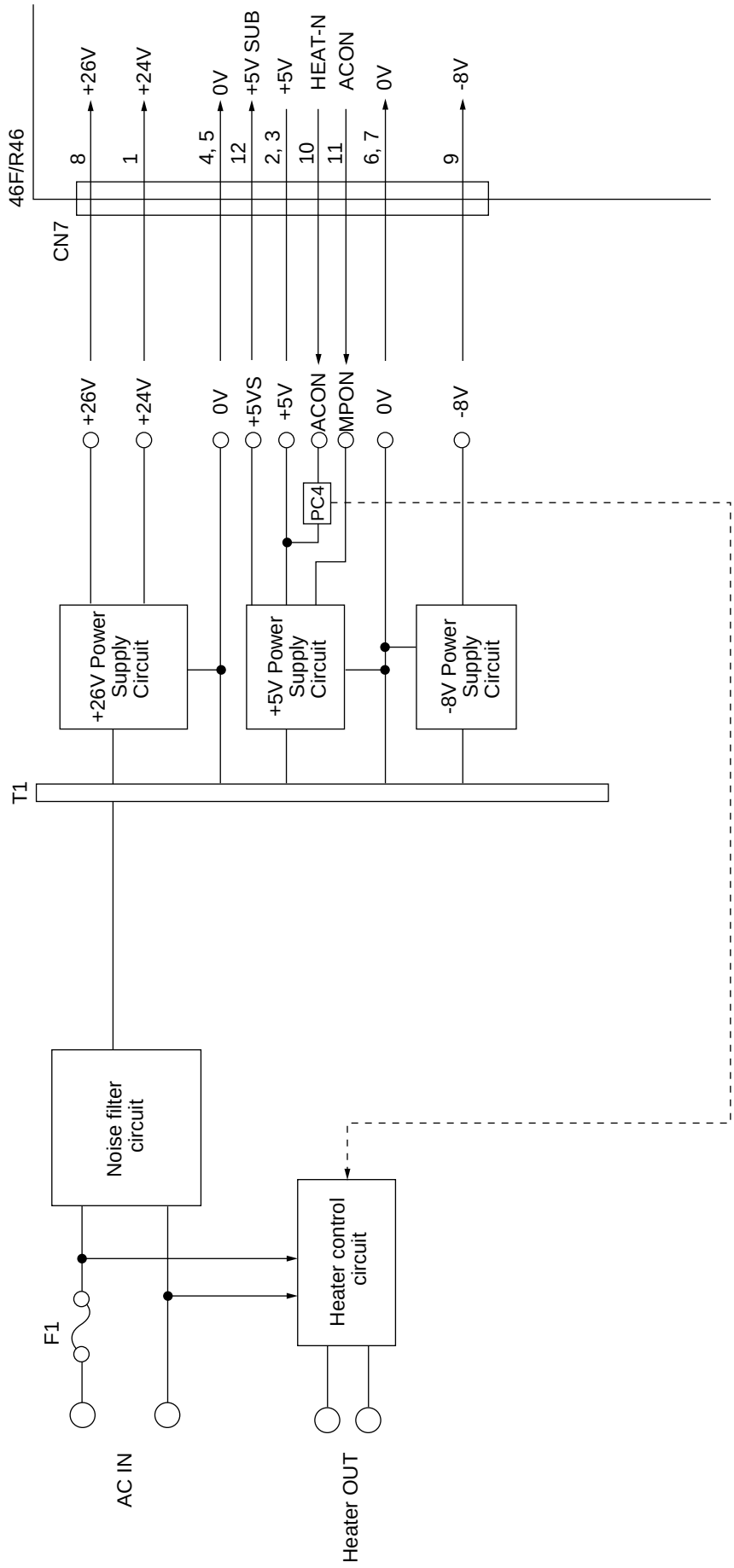


Figure A.32 Block Diagram

7. P2H Circuit Diagram

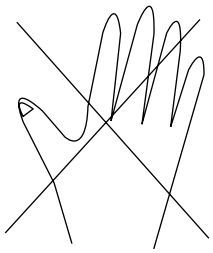
This circuit consists of photo-sensors and high voltage generation unit.

Note: If the high-voltage unit inside the P2H circuit board is replaced, the output voltage and current output from the terminals must be checked and adjusted. This section does not describe the checking and adjustment methods, however.

DANGER

Do Not
Touch !

HIGH VOLTAGE



You may be subjected to high-voltage electric shock by touching the following parts without an insulating material:

a. High-voltage unit

b. Contact ass'y

High voltage outputs are connected to the contact ass'y as shown below:

7.1 High-voltage section

7.1.1 Functional overview

The high-voltage outputs consist of TR1 (3.9 kV), TR2 (-0.75 kV), DB1 (+265 V), DB2 (-265 V), SB2 (-550V), CB1 (+400 V), CB2 (-1.35 kV) and CH (-1.30 kV) and are obtained as follows. The control signal obtained from IOGA4 of R46 board is applied to High-voltage power supply circuit. As result, the driver current is applied to the drive circuit, which will provide the high-voltage outputs.

Note:

Signal Name	Output Voltage	Application	Board
SB1/SB2	0–5 V/-550 V	Voltage applied to toner supply roller.	P2H
DB1/DB2	+265 V/-265 V	Voltage applied to developing roller.	P2H
TR1/TR2	+3.9 kV/-0.75 kV	Voltage applied to transfer roller.	P2H
CH	-1.30 kV	Voltage applied to charging roller.	P2H
CB1	+400 V	Voltage applied to cleaning roller.	P6L
CB2	-1.35 kV	Voltage applied to cleaning roller.	P6L

7.1.2 SB2, DB1, DB2 (P2H)

1) These four high-voltage outputs are obtained from the flyback voltage of Q10.

2) The positive and negative voltages of DB1 and DB2 are obtained by switching the charging direction under the triac and thyristor.

3) Feedback is not applied to these outputs. However, SB2 is limited by D85 and DB2 is limited by D84 so as not to provide an output exceeding a preset voltage.

7.1.3 TR1 and TR2 (P2H)

1) The TR1 high-voltage is obtained by rectifying the secondary output of Q17 switching circuit by a voltage-doubler rectifier.

2) TR1 output circuit has both constant current (hereinafter called CC) and constant voltage (hereinafter called CV) modes.

3) At first, TR1 output circuit operates in the CC mode. Once the voltage determined by parameters such as roller and medium is obtained, this circuit changes to operate in the CV mode by the control signal.

4) The TR2 output voltage is regulated by keeping the voltage obtained by switching operation of Q15 at a constant voltage by D66 and D65.

7.1.4 CH (P2H)

1) The CH output voltage is stabilized by keeping the primary flyback voltage obtained by switching operation of Q16 at a constant voltage by D76 and D82.

7.1.5 CBI, CB2 (P6L)

1) The CB1 output voltage is stabilized by keeping the primary flyback voltage obtained by switching operation of Q2 at a constant voltage by D7 and D6 and D5.

2) The CB2 output voltage is stabilized by keeping the primary flyback voltage obtained by switching operation of Q1 at a constant voltage by D7 and D6 and D5.

7.2 Photosensors

The photosensors mounted on this circuit board/sensor board supervise the paper running state during printing. These four photosensors are used in this printer as listed below. All of their outputs enter 46F/R46 board.

1) PS1 (photosensor 1): TNRSNS

   Detects the lack of the toner.

2) PS2 (photosensor 2): PSIN

   Detects the leading part of the paper and gives the supervision timing for switching from hopping operation to feeding operation. Supervises the paper running state and the paper size according to the paper arrival time and running time.

3) PS3 (photosensor 3): PSOUT

   Supervises the paper feed according to the time of arrival at the sensor and the time of passage of paper.

4) PS4 (photosensor 4): WRSNS
   Detects the leading part of sensor.
   Supervises the paper running state.

7.3 Cover open circuit

The cover open circuit consists of CVSW. When the Cover-Main is opened, the cover open microswitch (CVSW) on the OLHV/TLHV board is turned off to cut the supply of H5V to the high-voltage power supply circuit. As a result all high-voltage outputs are interruptted. At the same time, the CVOPN-N signal is sent to the control board to notify it the off state of the microswitch, and the control board performs the cover open processing.

8. EN9 and INU Circuit Diagram

The NCU board is selected from EN9 and INU because it differs depending on country's specifications.

- EN9
  UK, Flance, EC countries
- INU
  US, Canada, Australia, New Zealand, Singapore, China, Malaysia,
  non-EC countries (Poland etc.)

1. Block diagram
   - Figure A.33 shows a block diagram of EN9 circuit.
   - Figure A.34 shows a block diagram of INU circuit.

2. General functions of this circuit are as follows:
   1) Generates and detects signals to be exchanged with a telephone exchange or network in Phases A defined by ITU T.30.
      - Loop formation for call origination
      - Line current detection (see note 1) before call origination
      - Dial tone detection (see note 1)
      - Generation of dial pulses (see note 2)
      - Busy tone detection (see note 1)
      - Ringing signal detection

   2) Sends various data and signals from the 46F/R46 board to the telephone line after amplification.
      - Picture data/Protocol/Tonal signals/MF tone, etc.

      Note1: This procedure may be omitted depending on the dial parameters.
      2: MF (Multi-frequency) tone is generated by the modem and transferred to the telephone line via the NCU board.

3. Explanation on CN3 Terminals

CN3 pin No.	Terminal name	Explanation	EN9	INU
36	OH2	Detection of off-hook of terminal connected to TEL-1 or TEL-2.		
40	RI	0 - 5 V signal output synchronized with the ringing signal frequency		
24	PP	Relay control signal for special service code detection at parallel pickup or remote reception		
13, 14, 41, 42	GND	Ground		
37, 38	sub + 5 V	Sub power supply for OH2 and RI detection		
33, 34	+ 5 V	Power supply for relays and logic circuits		
43	+ 5 VA	+5 V power supply for analog circuit		*
44	S	TX Signal		
45	– 5 VA	– 5 V power supply for analog circuit		*
48	R	RX Signal		
46, 47, 49	SG	Signal ground		
50	Rp	Receiving sensitivity determination terminal		
22	DP	Pulse dial control signal		
20	CML	Line seizure control signal		
30	F. ICC	Loop current control signal upon line seizure		*
28	SR	Control signal for connection between LINE and TEL terminals		
18	MUTE	Control signal for pulse dial improvement and bell shunt relay		

Note *: Unused.

8.1 EN9 circuit diagram

① Lightning arresters (AR1, 2)
The nominal operating voltage is 500 V.
When connecting the ground of the arrestor to the chassis, tighten ARG on the PCB with a screw. At this time, the PCB is grounded through the power cable.
The TB1 arrestor ground terminal can also be used to connect to the earth directly.

③ Diode bridge (DB1)
This circuit rectifies the loop current so that the DC circuit characteristics are not affected by a polarity change over the line.

④ DC circuits (Q1, R506, R507, C4, R602)
These circuits provide DC characteristics according to the line requirements.

⑤ Impedance matching network (R510, R512, C502)
This circuit matches the impedance between the line and equipment to reduce reflection of transmitted signals.

⑥ Receiving sensitivity (R517, R518, C520)
The receiving sensitivity at line hunting is determined by R518, C520 and the MF tone receiving sensitivity at parallel pickup is determined by R518, C520, R517.

⑦ CML (RL1)
This circuit selectively switches the line between the telephone or facsimile.

⑧ SR (RL2)
This circuit connects the line with the telephone. During facsimile transmission, it disconnects the telephone.

⑨ DP (IC2)
This circuit generates pulse dial signals.

⑩ MUTE (IC3)
During pulse dialing, this circuit closes to reduce the DC loop resistance.

⑪ PP (RL6)
When it detects MF or CNG tones without seizuring a line, it disconnects NT (5) to increase the input impedance and also sets the receiving sensitivity.

⑫ MUTE (RL3)
During pulse dialing, this circuit opens to prevent pulse distortion caused by capacitor C7. When it detects MF or CNG tones without seizuring a line, it opens to increase the impedance.

⑬ Pickup RC (R505, C5)
These circuits insert a high-impedance resistor and capacitor serially to prevent the line impedance from dropping by the line transformer T1.

⑭ Ring detectors (IC1)
These circuits detect a ring signal arriving to the line. If the input ring signal exceeds a specific voltage, the circuits output a signal of RI having the same frequency as the incoming RI.

⑮ Line transformer (T1)
This circuit processes send/receive signals required for facsimile transmission, dial tone receive signals required for automatic dialing, and MF tone send and remote receive signals. It separates between the line and equipment in terms of DC and also keeps a balance between the line and the ground.

⑯ Off-hook detectors (IC8, RL7)
These circuits detect the off-hook state of the telephone connected to the TEL1, TEL2, through LINE terminals. IC8 uses a high detection sensitivity than of RL7. In TEL/FAX mode, the higher sensitive IC8 is used to detect the off-hook state of the telephone while the main equipment is hunting a line.
Usually, IC8 is short-circuited by the CML relay (7) in the standby state and RL7 is used for off-hook detection.

㉗ FICC (IC4)
This circuits reduces the DC resistance to increase the loop current momentarily to assure operation of the switch at line seizuring.

㉘ Constant current circuits (Q502 and Q503)
These circuits provide DC characteristics according to the TBR-21 requirement.

㉙ Shunt (RL9)
This circuit prevents bell resonances in the telephone sets connected in parallel during pulse dialing and also reduces distortions of the pulse waveform.

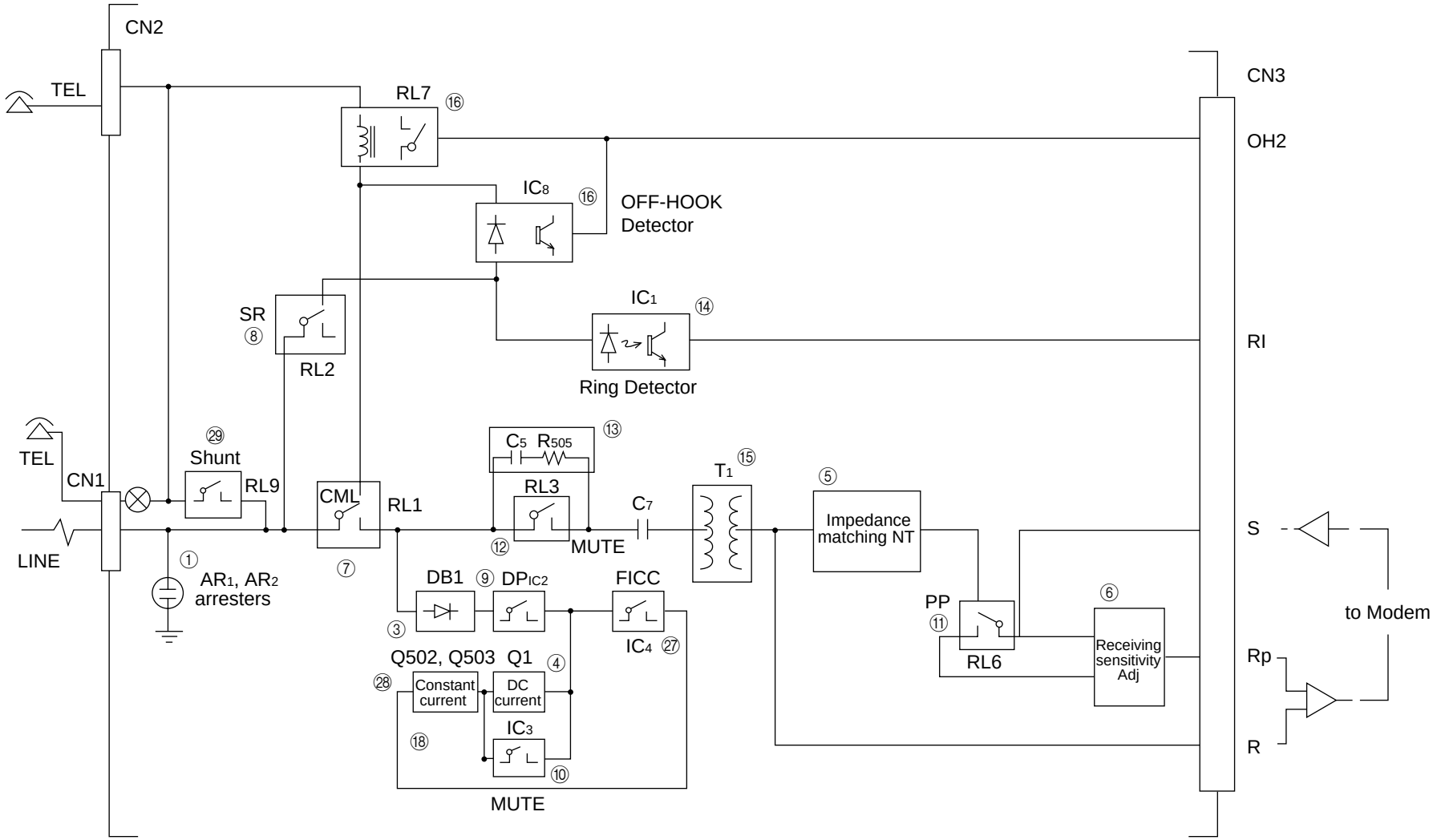


Figure A.33 Block Diagram of EN9

8.2 INU circuit diagram

① Lightning arresters (AR1, 2)
The nominal operating voltage is 500 V.
When connecting the ground of the arrestor to the chassis, tighten ARG on the PCB with a screw. At this time, the PCB is grounded through the power cable.
The TB1 arrestor ground terminal can also be used to connect to the earth directly.

③ Diode bridge (DB1)
This circuit rectifies the loop current so that the DC circuit characteristics are not affected by a polarity change over the line.

④ DC circuits (Q1, R506, R507, C4, R602)
These circuits provide DC characteristics according to the line requirements.

⑤ Impedance matching network (R544, C513, R545, R510, C502, R512, R511, C503, R513)
This circuit matches the impedance between the line and equipment to reduce reflection of transmitted signals.
It provides impedance (return loss) characteristics to meet the line requirement using the connector keys (CN15 to CN35).

⑥ Receiving sensitivity (R516, R515, R543, R519, R520, R546)
The receiving sensitivity at line hunting is determined by R519, R520, R546 depending on the line impedance. Similarly, the MF tone receiving sensitivity at parallel pickup is determined by R516, R515, R543, R519, R520, R546. The receiving sensitivity is set using connector keys (CN15 to CN35).

⑦ CML (RL1)
This circuit selectively switches the line between the telephone or facsimile.

⑧ SR (RL2)
This circuit connects the line with the telephone. During facsimile transmission, it disconnects the telephone.

⑨ DP (IC2)
This circuit generates pulse dial signals.

⑩ MUTE (IC3)
During pulse dialing, this circuit closes to reduce the DC loop resistance.

⑪ PP (RL6)
If this circuits detects MF or CNG tones without seizuring a line, it disconnects Impedance matching Net work (5) to increase the input impedance and also sets the receiving sensitivity.

⑫ MUTE (RL3)
During pulse dialing, this circuit opens to prevent pulse distortion caused by capacitor C7. If it detects MF or CNG tones without seizuring a line, it opens to increase the impedance.

⑬ Pickup RC (R505, C5)
These circuits insert a high-impedance resistor and capacitor serially to prevent the line impedance from dropping by the line transformer T1.

⑭ Ring detectors (IC1)
These circuits detect a ring signal arriving to the line. If the input ring signal exceeds a specific voltage, the circuits output a signal of RI having the same frequency as incoming RI.

⑮ Line transformer (T1)
This circuit processes send/receive signals required for facsimile transmission, dial tone receive signals required for automatic dialing, and MF tone send and remote receive signals. It separates between the line and equipment in terms of DC and also keeps a balance between the line and the ground.

⑯ Off-hook detectors (IC5)
These circuits detect the off-hook state of the telephone connected to the TEL.

⑰ Impedance switches (CN15 to CN35)
These circuits set the impedance according to the line requirement.
220: 220 ohm + 820 ohm//115 nF (CN15)
370: 370 ohm + 620 ohm//310 nF (CN35)
600: 600 ohm (CN25)

⑲ Ring impedance switches (S1-1, 2)
These switches set the ring impedance according to the line requirement.

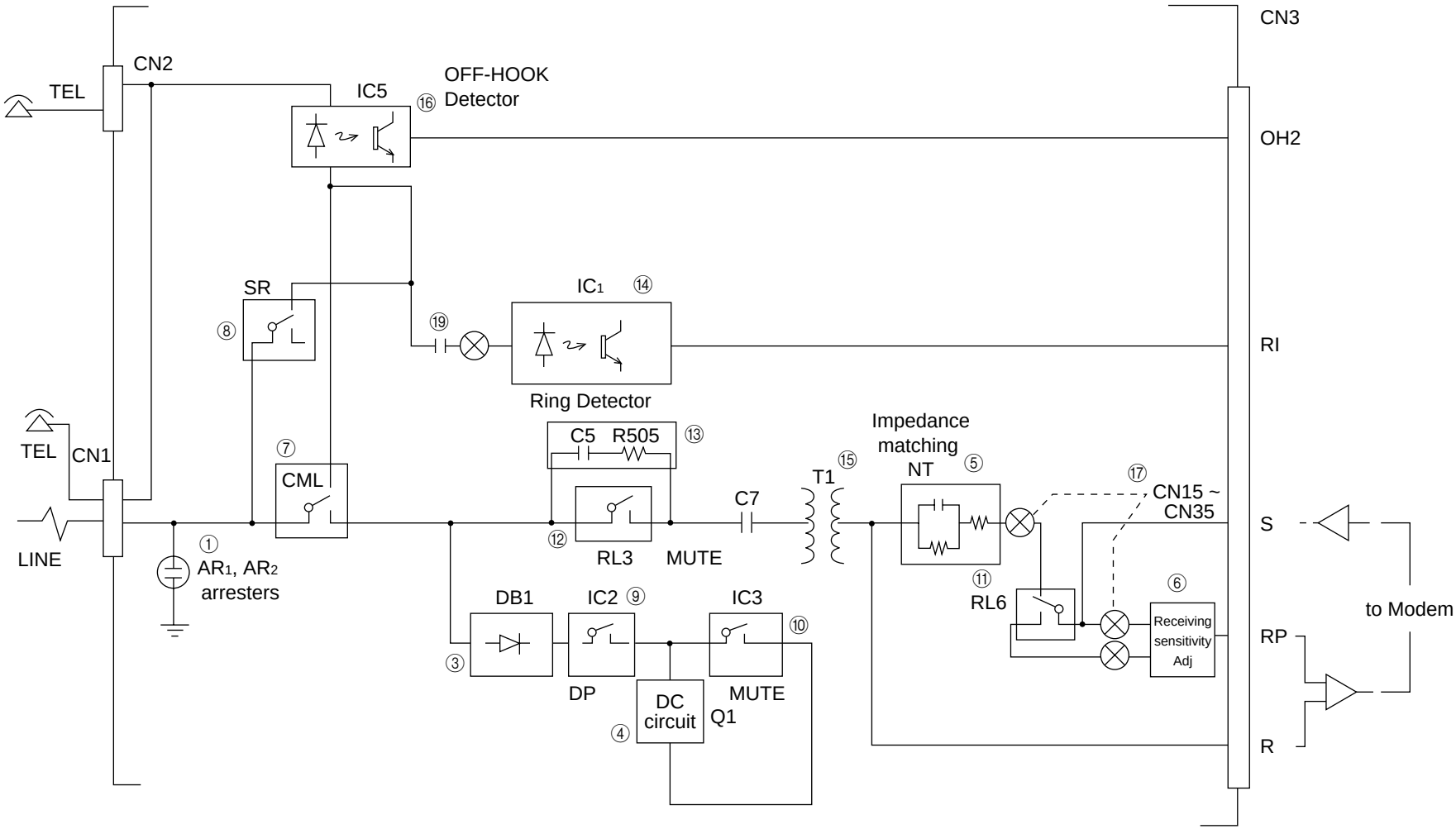
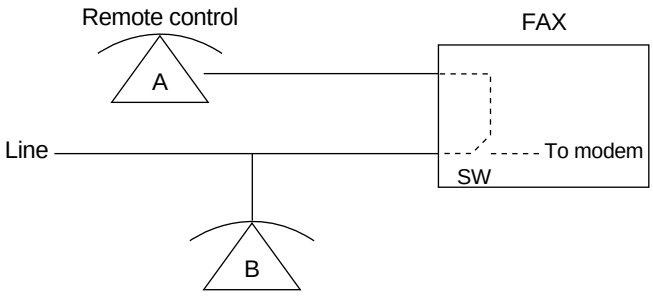


Figure A.34 Block Diagram of INU

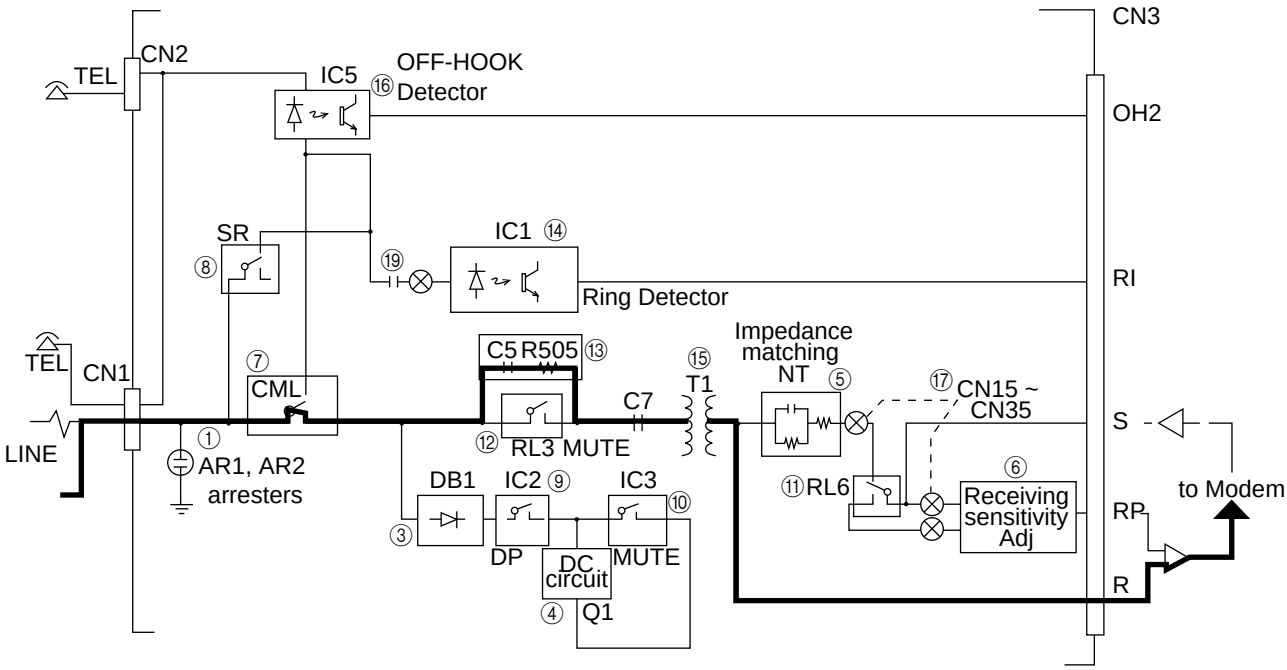
8.3 Outline of Parallel Pick Up

Parallel pick up is a function that controls a fax (to make a fax in receive mode) from a telephone set connected parallel to a fax. The two possible parallel connections of telephone sets A and B are shown in the figure.



Remote control: To control a fax from telephone set A.
Parallel Pick UP (PP): To control a fax from telephone set B.

- Why a PP function is needed!
  As shown in the following block diagram, telephone sets B, A and A'' are connected to a telephone line.
  Since A and A'' are connected to the line via fax, off-hook status of any of the telephone sets can be detected by the OFF-HOOK Detector F in the block diagram. However, off-hook status of telephone set B cannot be detected by the fax side.
- PP Control
  When a normal ring arrives at the fax from the line, the CML 7 turns on resulting in the formation of an AC loop via circuit C. The AC loop makes it possible for the modem to detect the AC signals. If a user hooks up telephone set B after the first ring and enters the MF 2-digit special code in order to make the fax in the receive mode, then it becomes possible to detect the MF signals along that route.



Block diagram for Parallel Pick Up Path.

9. G4N-PCB

This PCB board is optionally available. Using this board allows the system to be ready for the G4 protocol.

The block diagram of this board is shown on the next page.

This board is connected to the MCNT board with a 50-pin connector (CN1). 23 pins of this connector are signals lines dedicated to the G4N board, and the remaining 27 pins are signal lines shared with the NCU board.

Data is transferred to/from the CPU on the MCNT board via the 2-KB dual port RAM. When data is sent, the MCNT board causes an interrupt to the G4N board using a CUREQ-N signal and writes data into the 2-KB dual port RAM. The G4N board expands the data from the dual port RAM in the DRAM, and sends the expanded data to the line via the driver.

When data is received, the G4N board causes an interrupt to the MCNT board using an OPREQ-N signal and writes data from the DRAM into the dual port RAM. The NCNT board reads data from the dual port RAM, expands the data in the DRAM on the MCNT board, and sends the data to the LED head via the IOGA4/IOGA6.

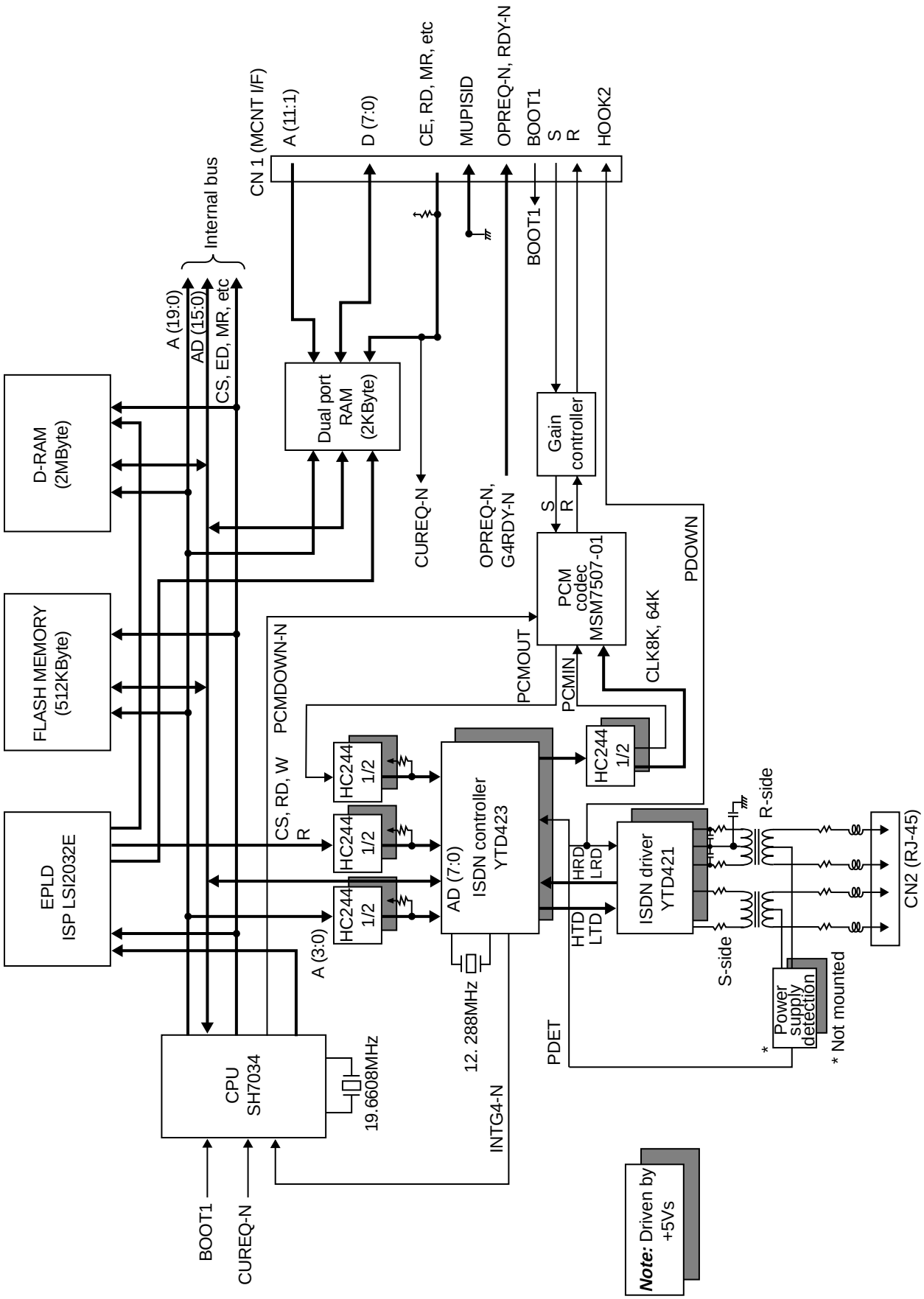


Figure A.35 G4N Board Block Diagram

APPENDIX B DESCRIPTIONS OF PRINT OPERATION

1. Electro-Photographic Processor

The electro-photographic processor prints out the image data to be sent from the main control board on sheets of paper. Figure B-1 shows the layout drawing of the electro-photographic processor.

(1) Image drum unit
The image drum unit makes a toner adhere to the formed electrostatic latent image with static electricity. This electrostatic latent image is formed by the lights irradiated from LED heads.

(2) Electromagnetic clutch
The electromagnetic clutch controls the rotation of the hopping roller according to signals from the control block.

(3) Pulse motor (Main)
This pulse motor of 48 steps/rotation is two-phase excited by the signal from the main control board; it performs feeding control by switching normal rotation to reverse rotation or vice versa and turning on/off the electromagnetic clutch. The relationship between the main motor, electromagnetic clutch, regist gear, drum gear, hopping roller is shown in the table below and on the subsequent pages.

(4) LED head
The shift and latch registers receive image data from the main control board for each dot line. 2,560 or 2,496 LEDs are driven to radiate the image drum.

(5) Heat Assy
The heat Assy consists of a heater, a heat roller, a thermistor, and a thermostat.

The power supply unit supplies AC voltage to the heater according to the HEATON signal from the main control board to heat the heat roller. The main control board monitors the heat roller temperature via the thermistor and keeps the temperature constant by turning on/off the heater AC voltage supply.

If the heat roller temperature rises abnormally, the thermostat of the heater voltage supply circuit functions to forcibly suspend the AC voltage supply.

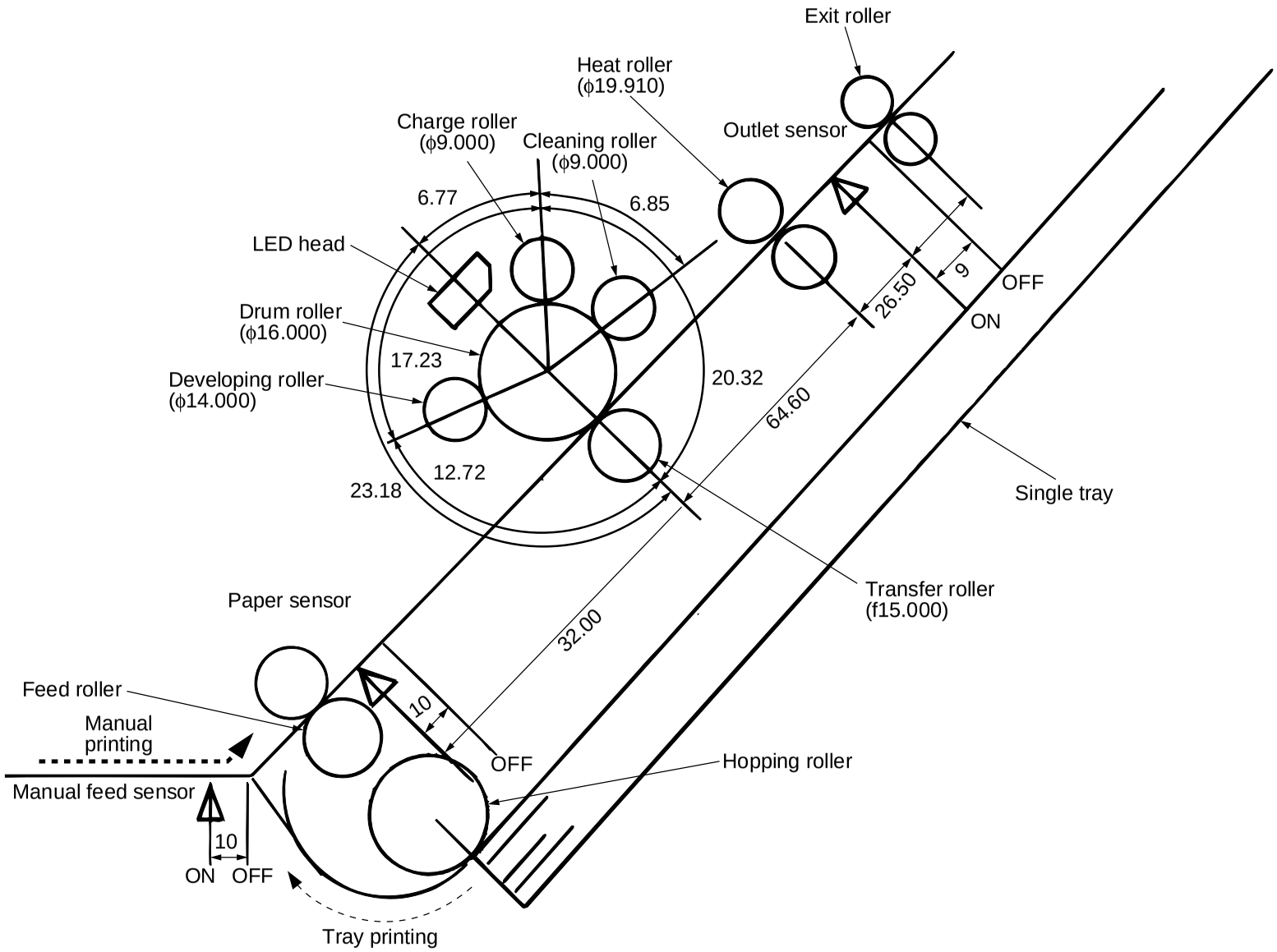


Figure B.1 Layout Drawing of Electro-Photographic Processor

2. Electro-Photographic Process

(1) Electro-photographic process

The electro-photographic process is outlined below.

① Charging

Main Motor	Electromagnetic Clutch	Hopping Roller	Regist Gear	Drum Gear	Operation
Normal rotation	OFF	Non-rotation	Non-rotation	Rotation	Warm-up
Reverse rotation	ON	Rotation	Rotation	Rotation	Hopping
	OFF	Non-rotation	Rotation	Rotation	Prinitng

The surface of the OPC drum is charged negatively and uniformly by applying the DC voltage to the CH roller.

② Exposure
Light emitted from the LED head irradiates the negatively charged surface of the OPC drum. The surface potential of the irradiated surface attenuates to form the electrostatic latent image corresponding to the image signal.

③ Development and residual toner recovery
The negatively charged toner is brought into contact with the OPC drum, adhering to the electrostatic latent image on the OPC drum by static electricity. This adhesion causes the electrostatic latent image to change to a visible image.

At the same time, the residual toner on the OPC drum is attracted to the developing roller by static electricity.

④ Transfer
When paper is placed over the image drum surface, the positive charge which is opposite in polarity to that of the toner, is applied to the reverse side by the transfer roller. The toner is attracted by the positive charge and is transferred onto the paper. This results in the transfer of the toner image formed on the image drum onto the paper.

⑤ Cleaning
The cleaning roller temporarily attracts the residual toner on the transferred OPC drum with static electricity, then returns the toner to the OPC drum.

⑥ Fusing
The transferred unfused toner image is fused to a sheet of paper by applying heat and pressure to the image.

Figure B.2 is a flow for the electro-photographic process.

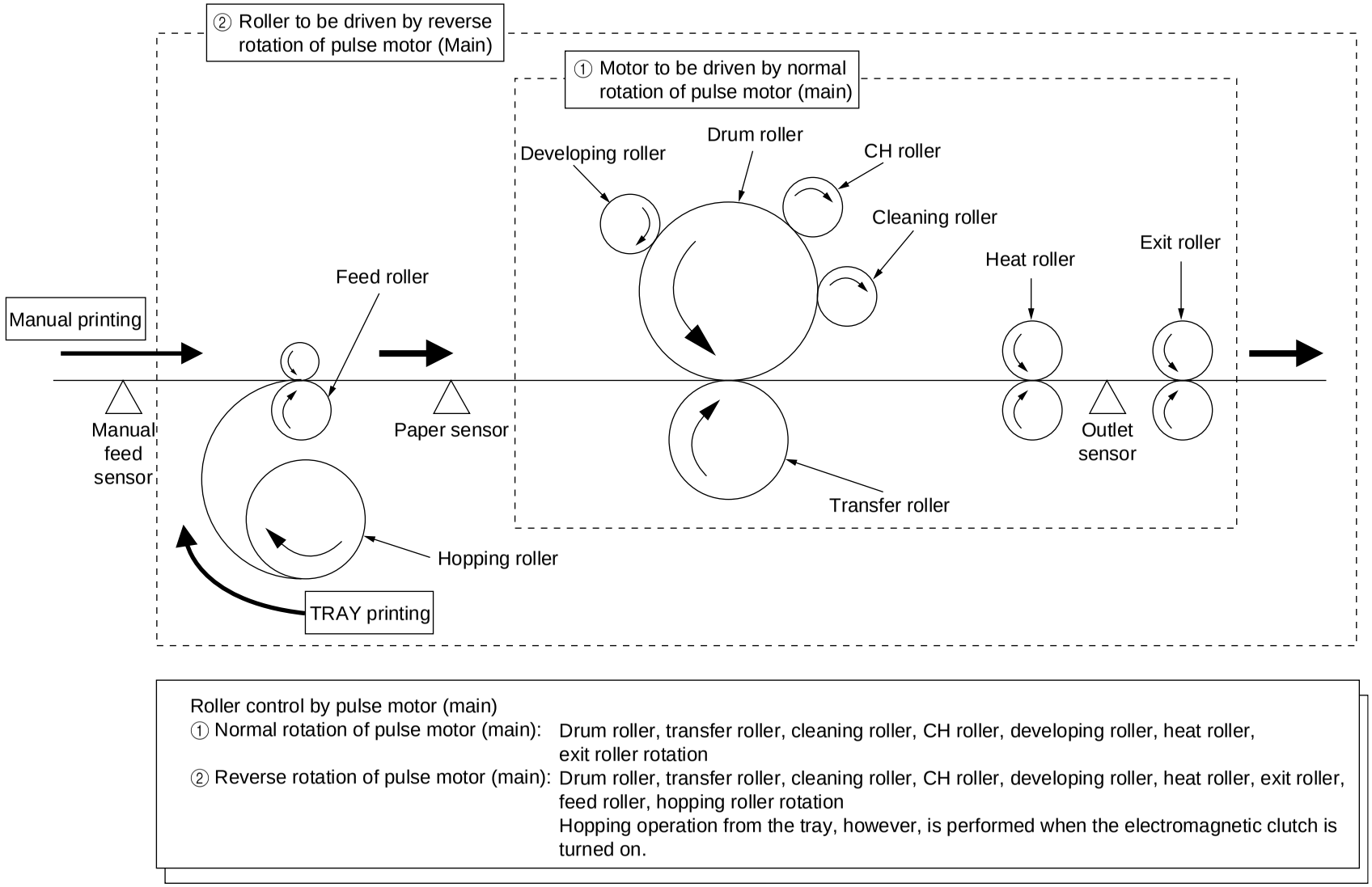

② Roller to be driven by reverse rotation of pulse motor (Main)
① Motor to be driven by normal rotation of pulse motor (main)
Developing roller
Drum roller
CH roller
Cleaning roller
Heat roller
Exit roller
Feed roller
Manual printing
Manual feed sensor
Paper sensor
Outlet sensor
Transfer roller
Hopping roller
TRAY printing
Roller control by pulse motor (main)
① Normal rotation of pulse motor (main): Drum roller, transfer roller, cleaning roller, CH roller, developing roller, heat roller, exit roller rotation
② Reverse rotation of pulse motor (main): Drum roller, transfer roller, cleaning roller, CH roller, developing roller, heat roller, exit roller, feed roller, hopping roller rotation
Hopping operation from the tray, however, is performed when the electromagnetic clutch is turned on.

Figure B.2 Schematic Drawing of OKIFAX 4550 Paper Feeding

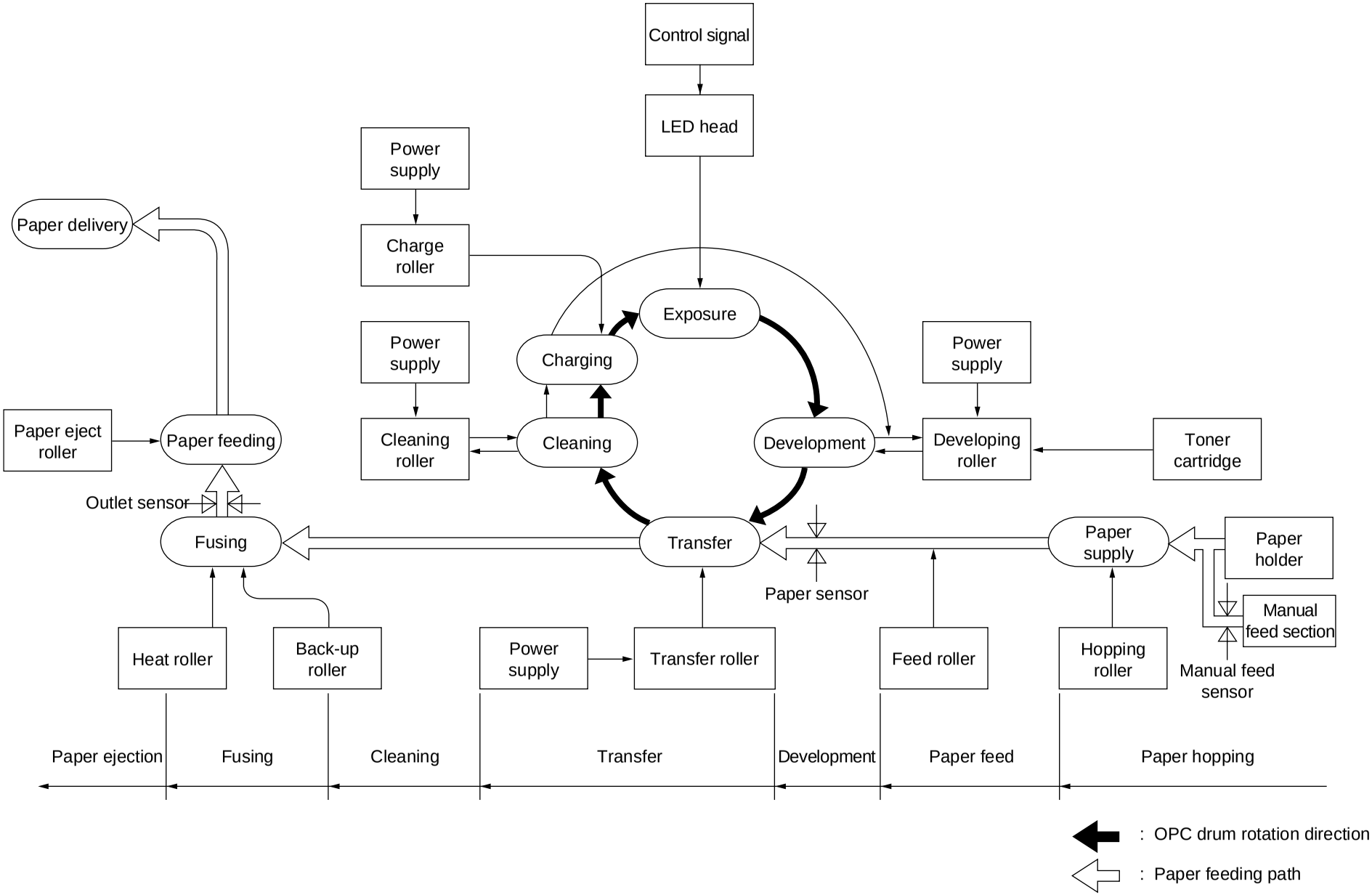
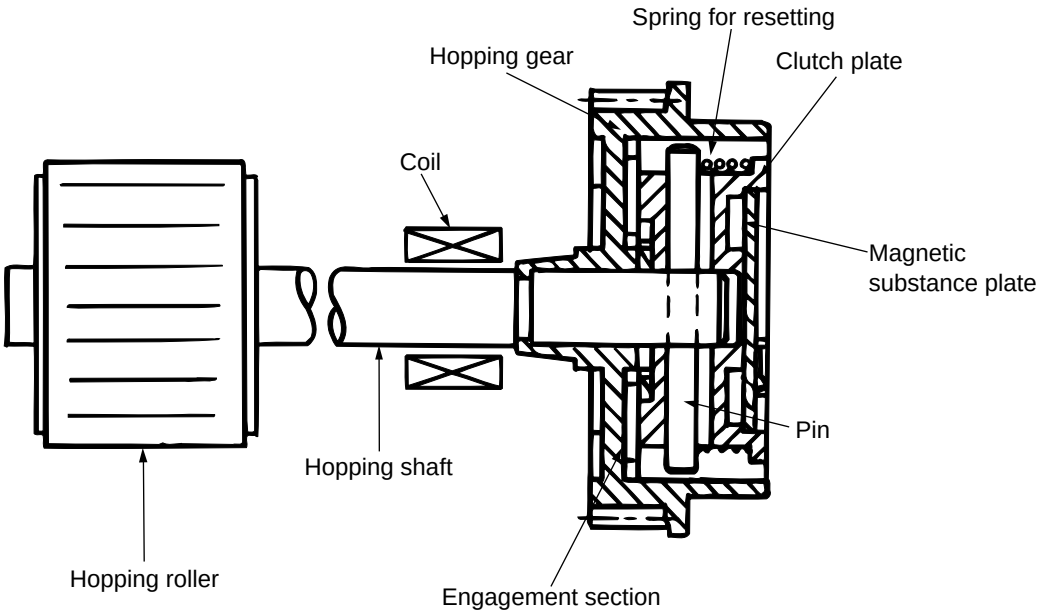


Figure B.3 Flow for Electro-Photographic Process

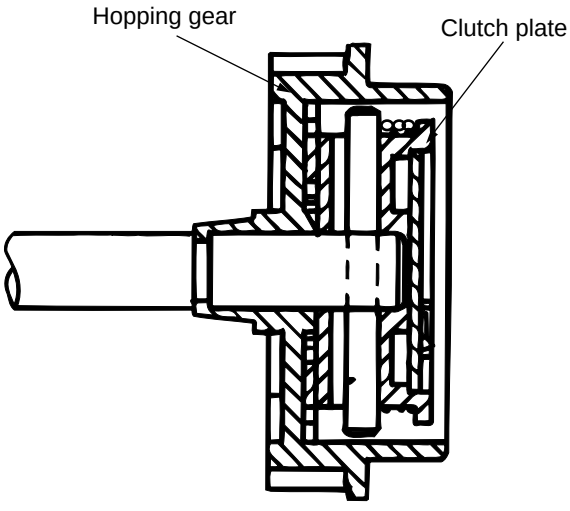
2.1 Explanation of Each Process Operation

(1) Hopping
As shown in the figure below, the clutch for hopping is turned on/off according to current ON/ OFF to a coil.

When the clutch is OFF



When the clutch is ON

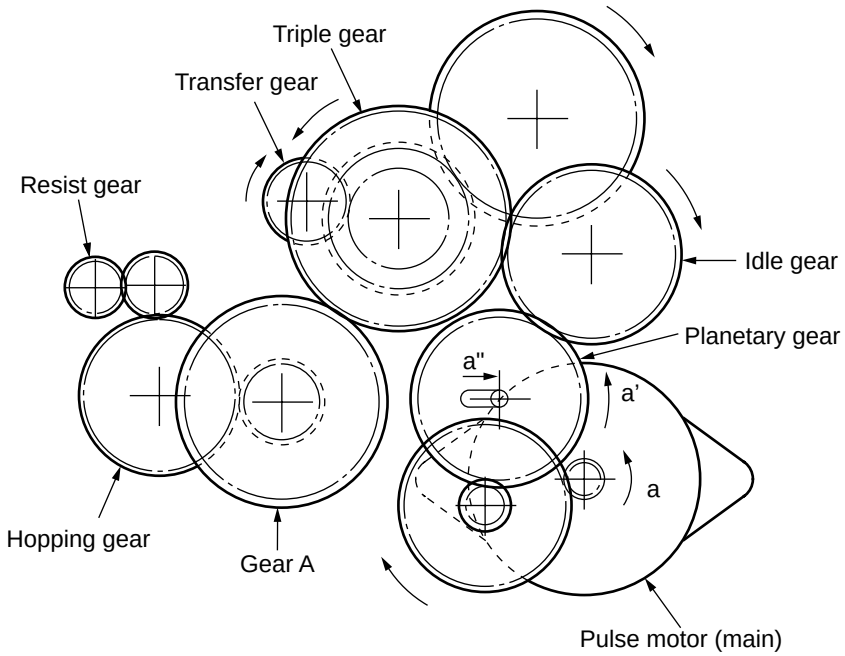


When the clutch is on, the hopping gear engages with the clutch plate to rotate the hopping roller.

When the clutch is off, the hopping gear is separated from the clutch plate by the spring for resetting, disabling the rotation of the hopping roller.

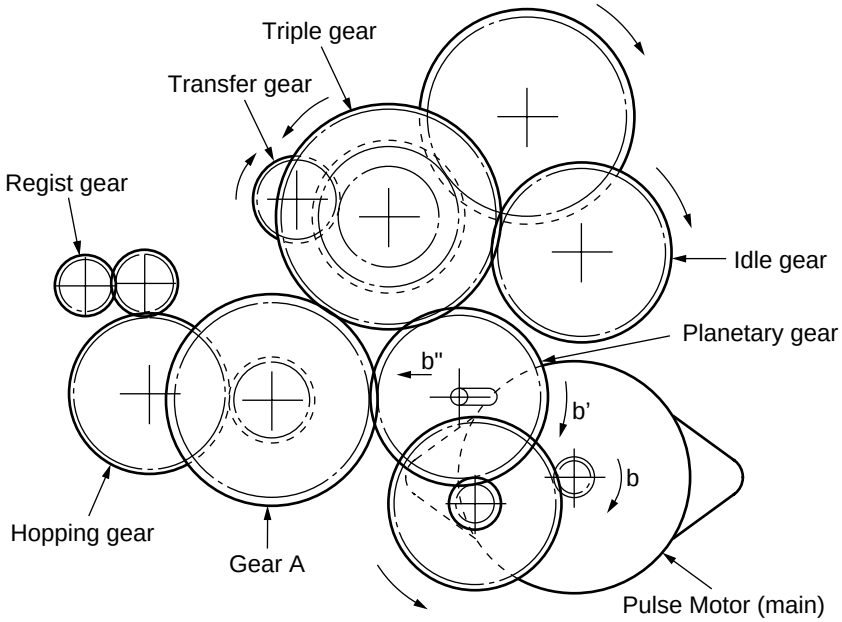
(2) Printing and warm-up

At warm-up



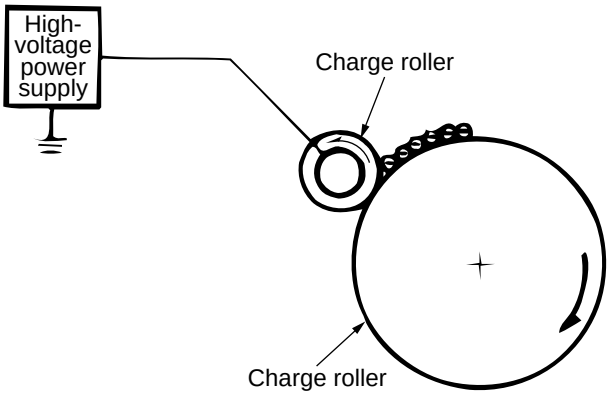
Rotate the pulse motor (main) in the a direction. The planetary gear rotates in the a' direction, dislocating its position in the a" direction. This causes the planetary gear to be separated from gear A. The hopping gear will not rotate. The triple gear and transfer gear rotate via the idle gear to drive the EP unit.

At printing

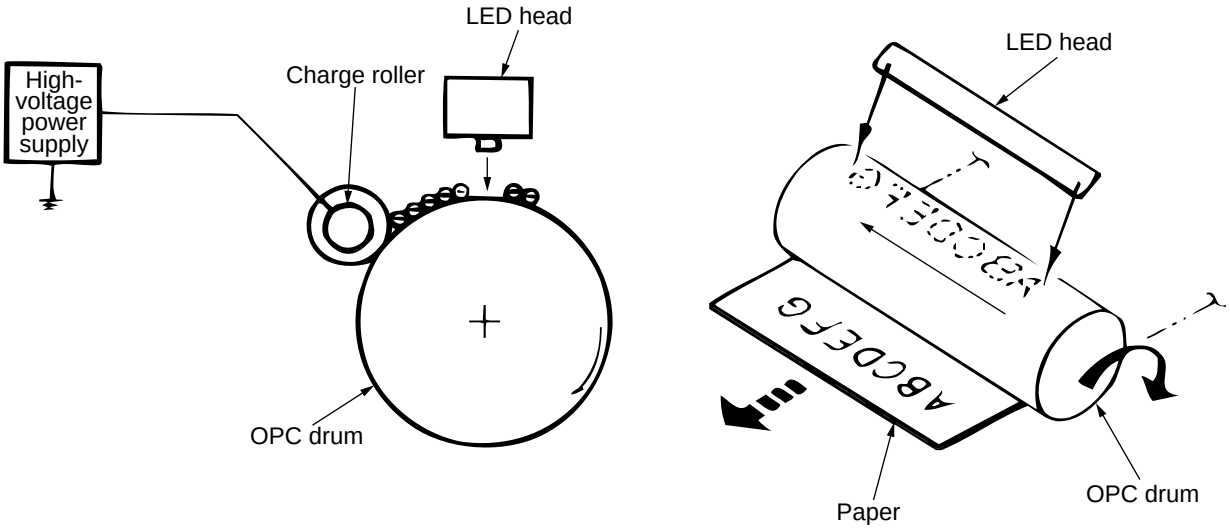


The paper is further advanced in synchronization to the print data.

(3) Charging
Charging is performed by applying DC voltage to the charge roller that is in contact with the surface of the OPC drum.



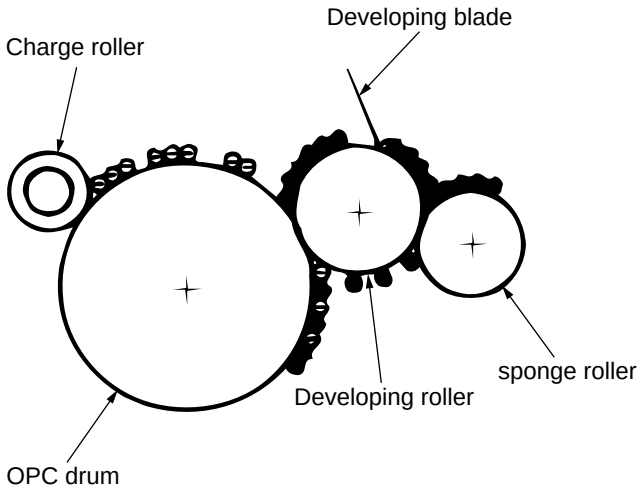
(4) Exposure
Light emitted from the LED head irradiates the negatively charged surface of the OPC drum. The surface potential of the irradiated surface attenuates to form the electrostatic latent image corresponding to the image signal.



(5) Development

The electrostatic latent image on the surface of the OPC drum is changed to a visible toner image by applying a toner to it. Development is performed in the contact part between the OPC drum and developing roller.

① The sponge roller negatively charges a toner and applies it to the developing roller.



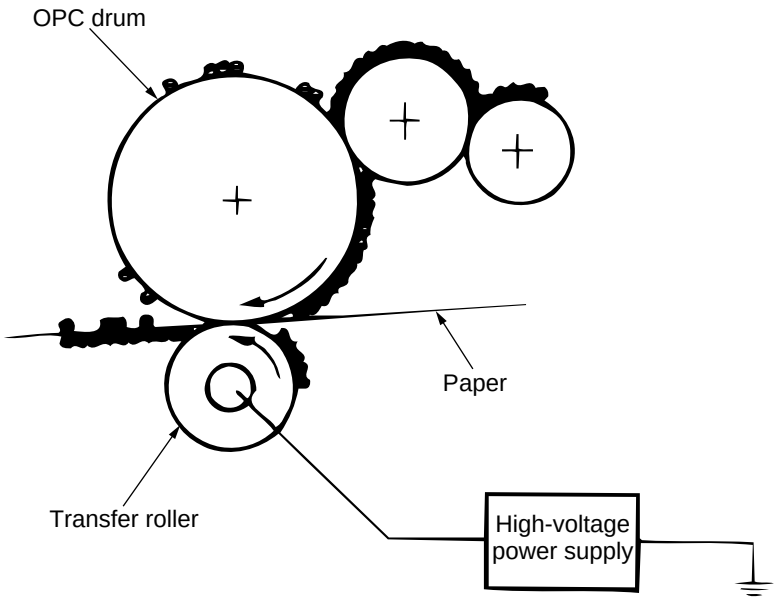
② The toner applied to the developing roller is thin-coated by the developing blade.

③ A toner adheres to the exposure part of the OPC drum in the contact part between the OPC drum and developing roller. This causes the electrostatic latent image to be changed to a visible image.

(6) Transfer

The transfer roller is composed of conductive sponge material. This roller is set so that the surface of the OPC drum and sheets of paper will adhere closely.

A sheet of paper is placed on the surface of the OPC drum and the positive charge opposite to the negative charge of a toner is applied from the reverse side by the transfer roller.



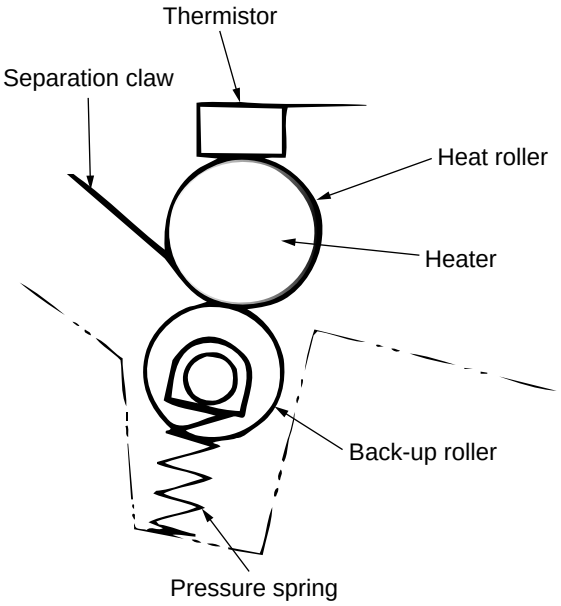
When a high positive voltage is applied from the power supply to the transfer roller, the positive charge induced on the surface of the transfer roller moves to the paper side at the contact part between the transfer roller and the sheet of paper. The positive charge on the lower side of the sheet of paper then causes the negatively charged toner adhering to the surface of the OPC drum to move to the upper side of the sheet. This enables transfer to the sheet of paper.

(7) Fusing

The transferred unfused toner image is fused to a sheet of paper because heat and pressure are applied when it passes between the heat roller and back-up roller.

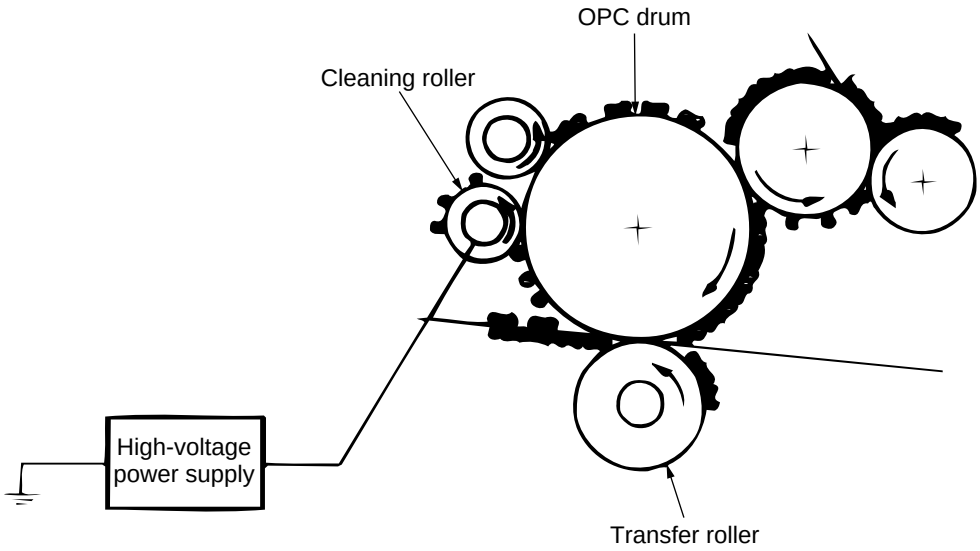
The Teflon-coated heat roller contains a 400 W heater (Halogen lamp) that heats the heat roller. The thermistor on the surface of the heat roller keeps the temperature of the heat roller constant. A thermostat is also installed for safety. If temperature rises abnormally, this thermostat opens to suspend voltage supply to the heater.

The back-up roller is pressurized to the heat roller by the pressure spring on each side.



(8) Cleaning

After transfer has terminated, the cleaning roller temporarily draws in the untransferred residual toner adhering to the OPC drum with static electricity and then returns it to the OPC drum.



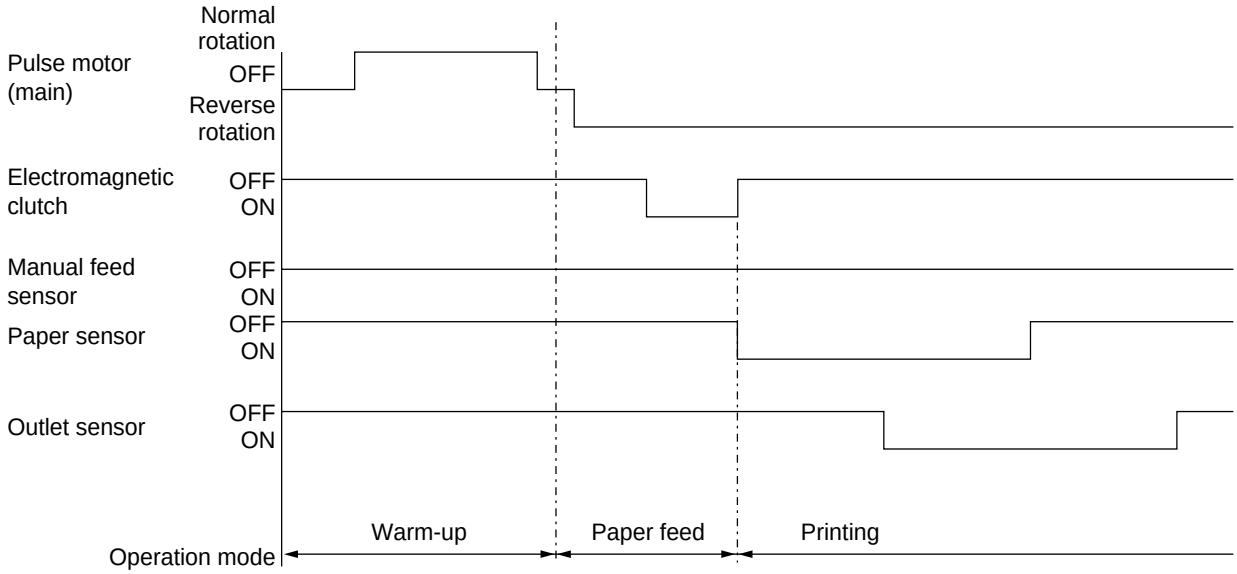
3. Paper Jam Detection

The OKIFAX4550/OKIFAX4550 ISDN monitors the paper status when the power supply is on and during printing. In the following cases, the OKIFAX4550/OKIFAX4550 ISDN interrupts the printing process as a paper jam. Printing can be recovered by opening the cover, removing the jammed paper, and closing the cover.

Error	Cause of Error
Paper inlet jam	• Only the manual feed sensor detects "Paper exists" when the power supply is on. • The leading part of the paper does not reach the paper sensor although hopping operation was performed three time.
Paper feed jam	• The leading part of the paper does not reach the outlet sensor within a fixed time after it has passed the paper sensor.
Paper outlet jam	• The trailing part of the paper does not pass the outlet sensor within L mm after the leading part of the paper has passed the outlet sensor. 2.52" (64 mm) ≦ L ≦ 15.77" (400.6 mm)
Paper size error	• The trailing part of the paper does not pass the paper sensor within L mm after the leading part of the paper has passed the paper sensor. 2.52" (64 mm) ≦ L ≦ 15.77" (400.6 mm)

Type of Error	Supervisory Sensor	Reference Value	Error	
			Pluse	Minus
Paper feed error	Electromagnetic clutch ON/ Paper sensor ON	69.8	35	
Paper feed jam1	Paper sensor ON/ Outlet sensor ON	122.9	20.0	
Paper size error	Paper sensor ON/ Paper sensor OFF	2.52" (64 mm) ≦L≦ 15.77" (400.56 mm)		
Paper outlet jam	Outlet sensor ON/ Outlet sensor OFF	2.52" (64 mm) ≦L≦ 15.77" (400.56 mm)	45.0	45.0
Paper feed jam 2	Paper end sensor OFF/ Outlet sensor OFF	121.9	20.0	20.0

Unit: mm

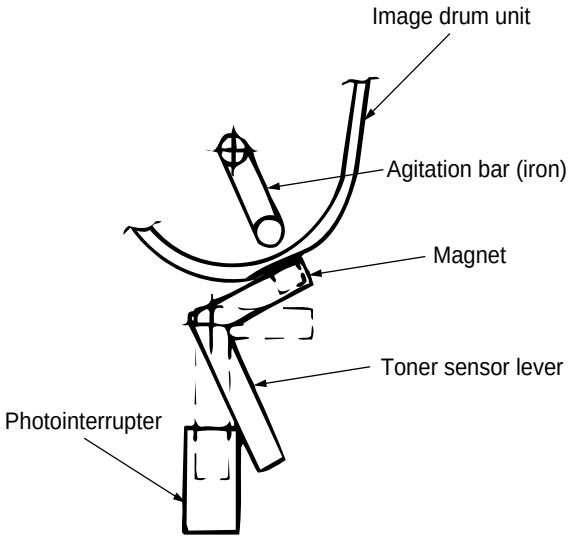


Timing Chart for Paper Feed (Tray Feed)

4. Toner Low Detection

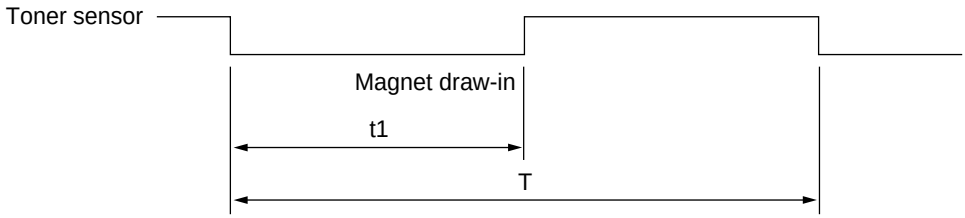
• Hardware configuration of toner sensor

The figure below shows the hardware configuration of the toner sensor.



Hardware Configuration of Toner Sensor

• Toner detection method



(1) Toner sensor monitoring conditions are shown in the figure below.

Caution: The toner sensor is not monitored when the drum is inactive.

(a) When the toner-low state continues twice, Toner Low occurs. (This state is monitored at a cycle of 40 milliseconds.)

(b) When the toner-full state continues twice, Toner Low is released. (This state is monitored at a cycle of 40 milliseconds.)

(c) When the toner sensor does not change over two cycles (T × 2), the toner sensor alarm state occurs.

(d) After the EP unit has been replaced (after the drum counter has been reset), Toner Low is not detected when the drum counter indicates 1 to 100 counts.

(2) The basic rotation cycle of the toner sensor is as follows:

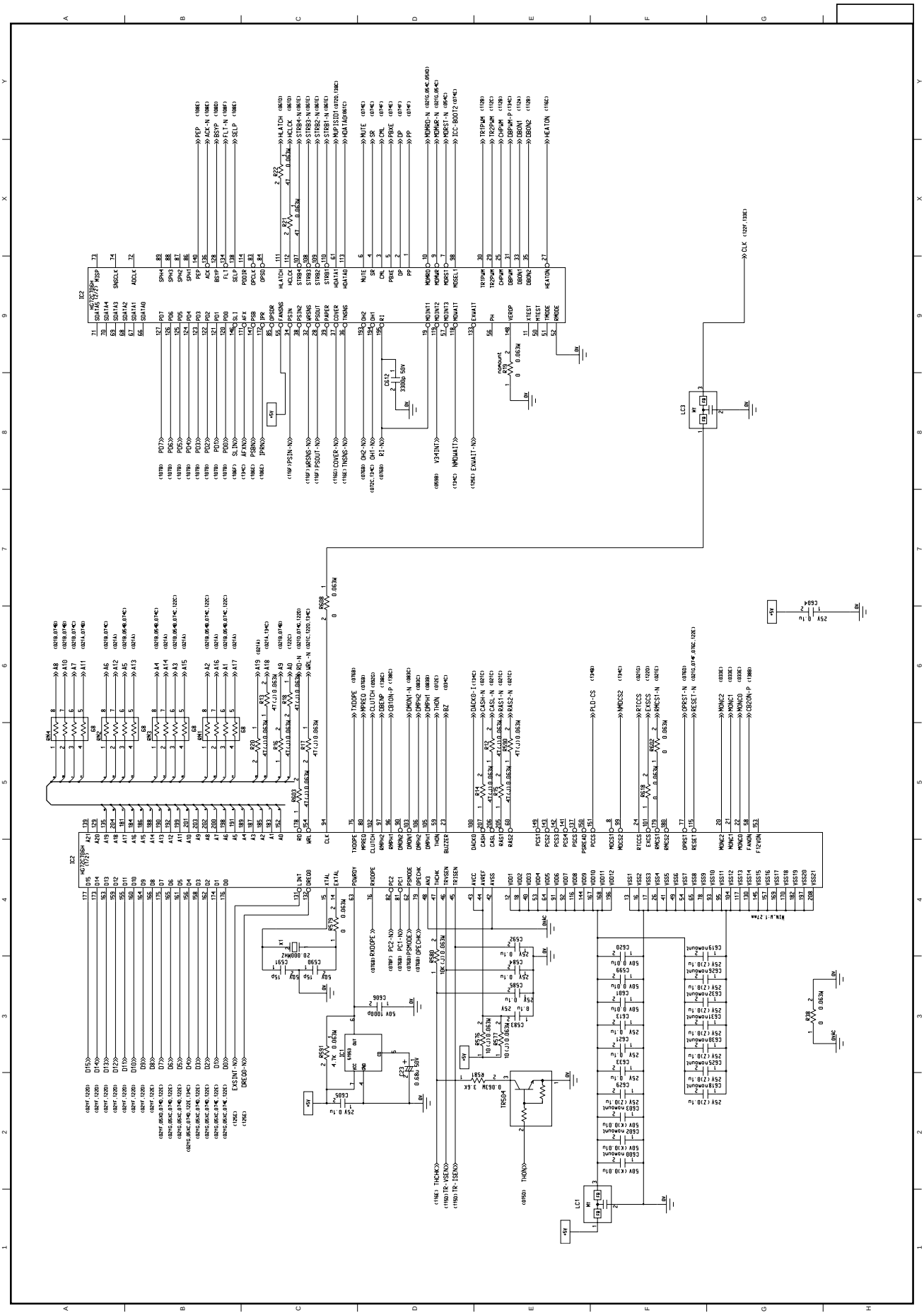
	T time
Basic rotation cycle of toner sensor	4.9 sec.
Toner low time	t1 > 1.2 sec.
Toner full time	1.2 sec. > t1 >

5. Cover Open

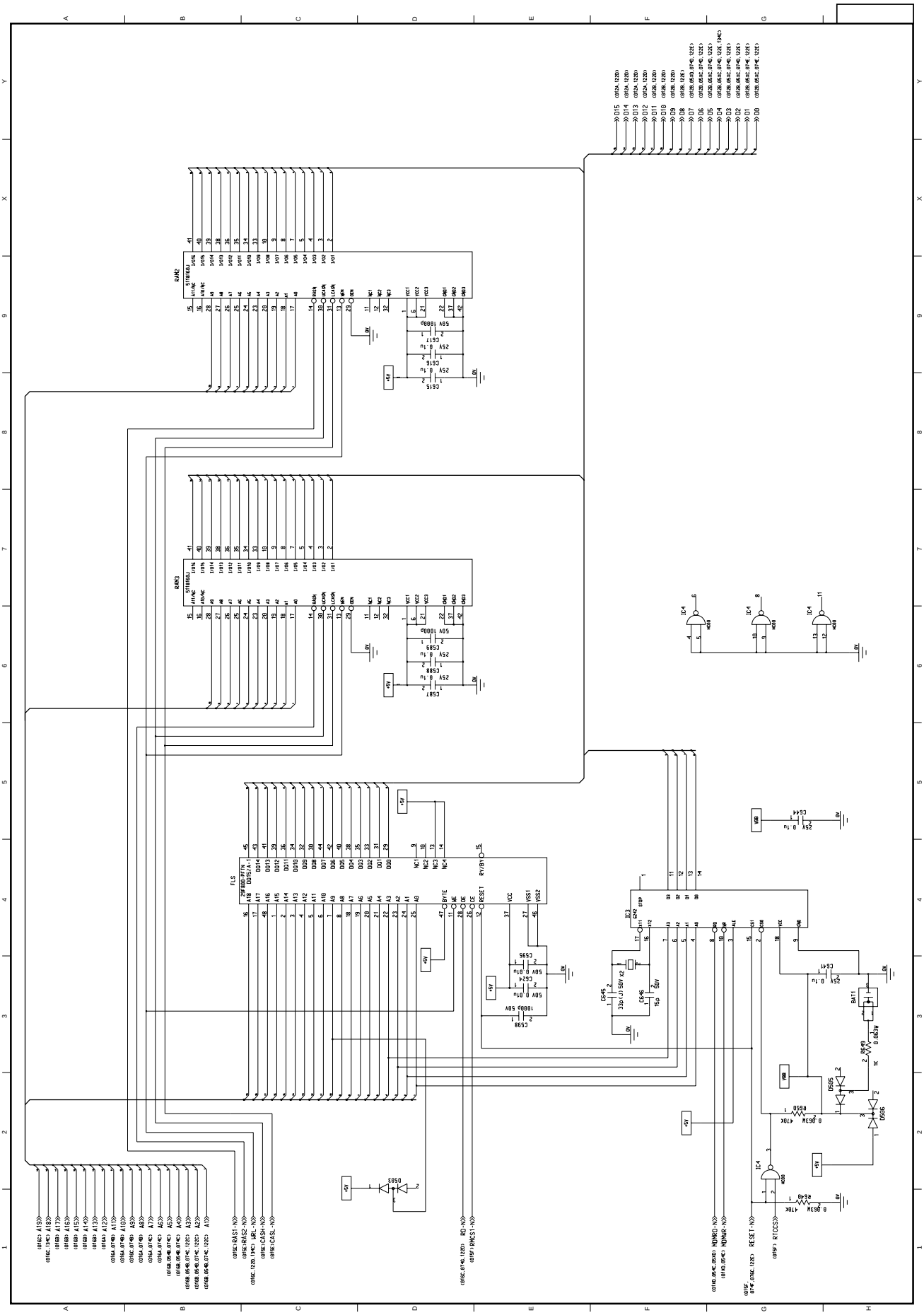
Opening the stacker cover turns off the microswitch on the high-voltage power supply board to suspend +5 V supply to the high voltage power supply. This results in the stop of all high-voltage outputs. At the same time, the CVOPN signal is issued to notify the main control board of the switch status and cover open processing is executed.

APPENDIX C CIRCUIT DIAGRAMS

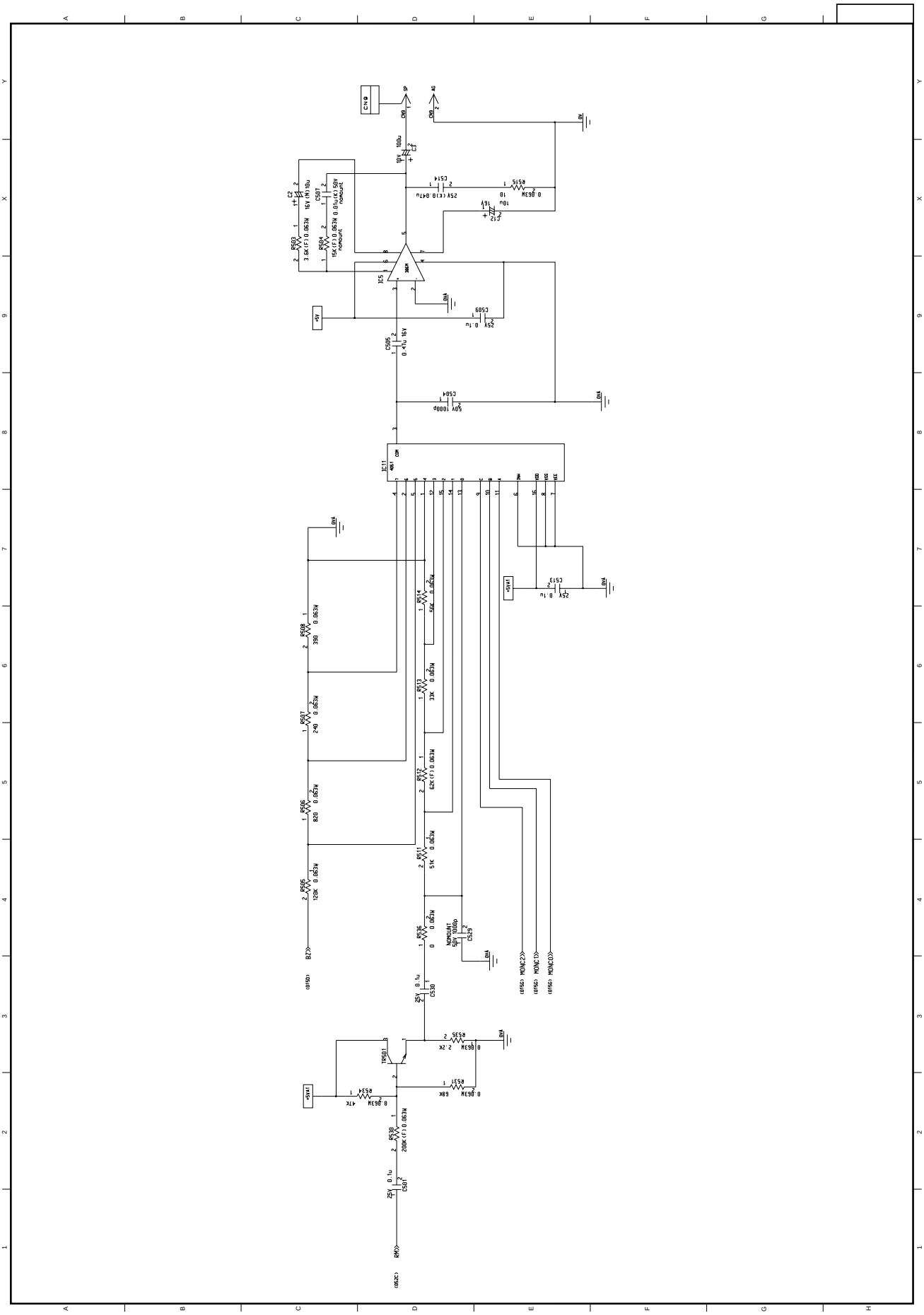
46F-PCB Circuit Diagram (1/13~13/13)	(41196601SS)
R46-PCB Circuit Diagram (1/15~15/15)	(41033201SS)
04W-PCB Circuit Diagram (1/2~2/2)	(40071401SS)
EN9-PCB Circuit Diagram (1/2~2/2)	(41144301SS)
INU-PCB Circuit Diagram (1/1)	(41144501SS)
MPW1546 POW(120VAC) Circuit Diagram (1/1)	(S1PS1303)
MPW1446 POW(230VAC) Circuit Diagram (1/1)	(S1PS1302)
P2H-PCB Circuit Diagram (1/1)	(40599101SS)
P6L-PCB Circuit Diagram (1/1)	(40386701SS)
G4N-PCB Circuit Diagram (1/7~7/7)	(41033701SS)



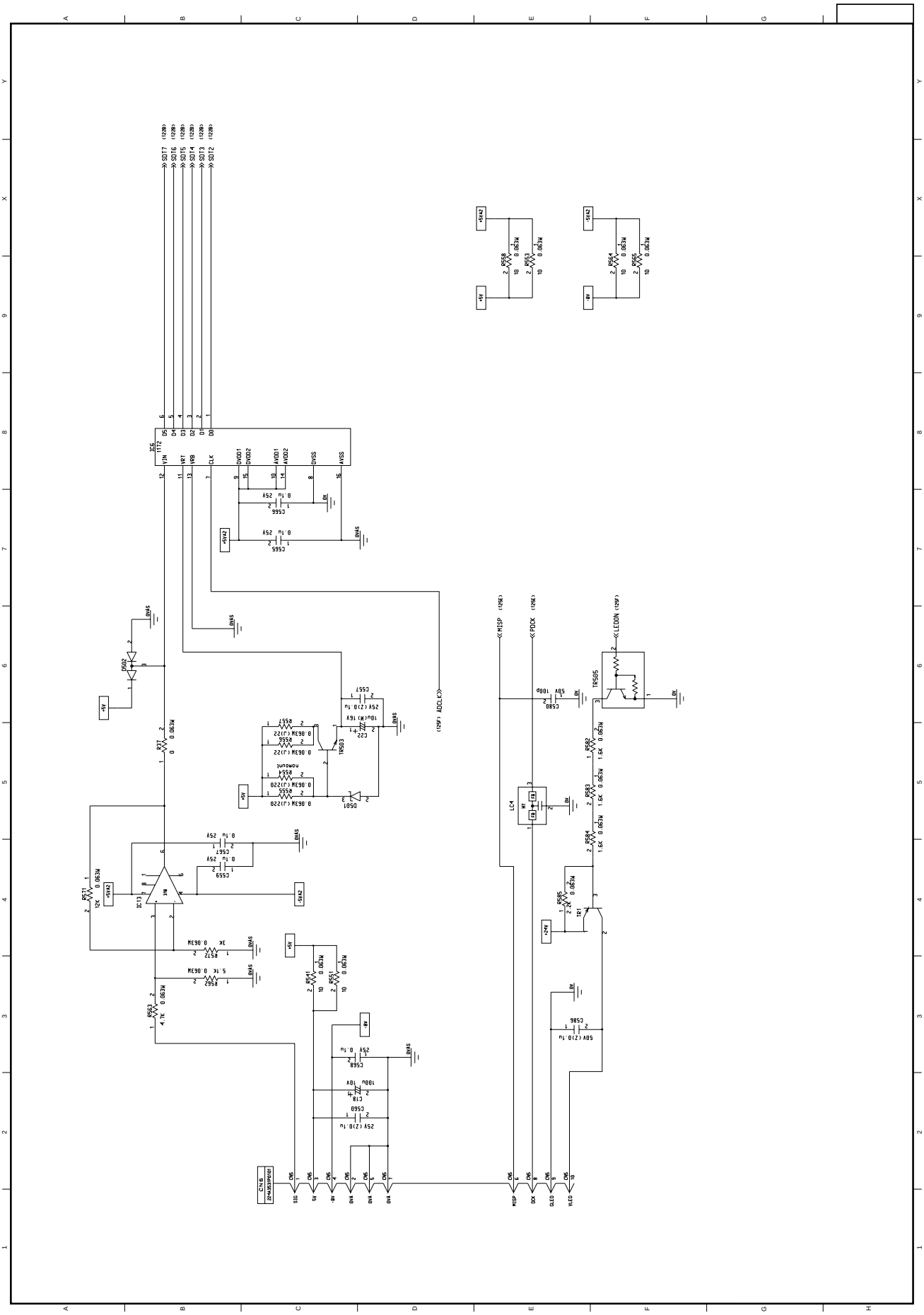
46F-PCB Circuit Diagram (1/13)
(41196601SS)



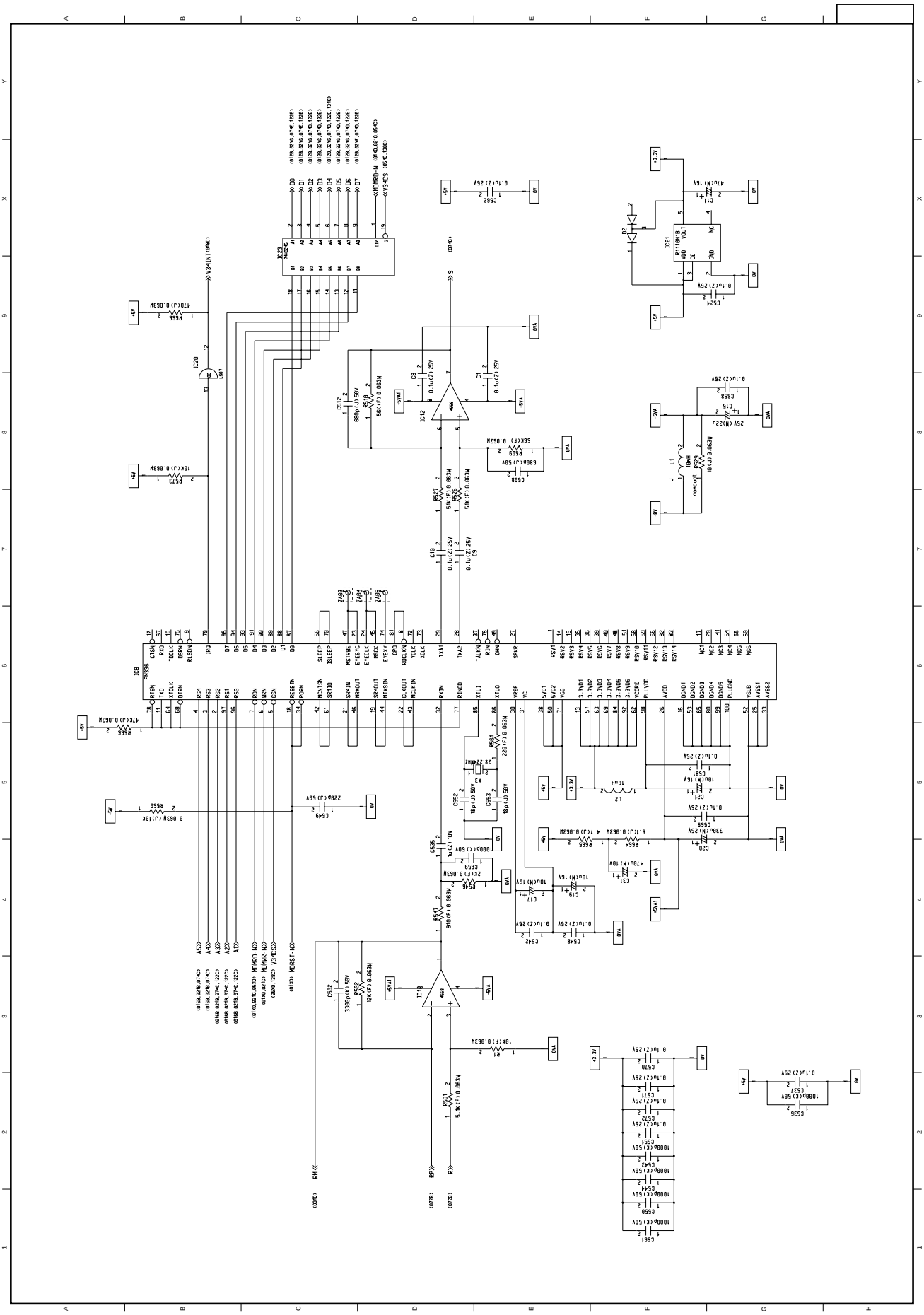
46F-PCB Circuit Diagram (2/13)
(41196601SS)



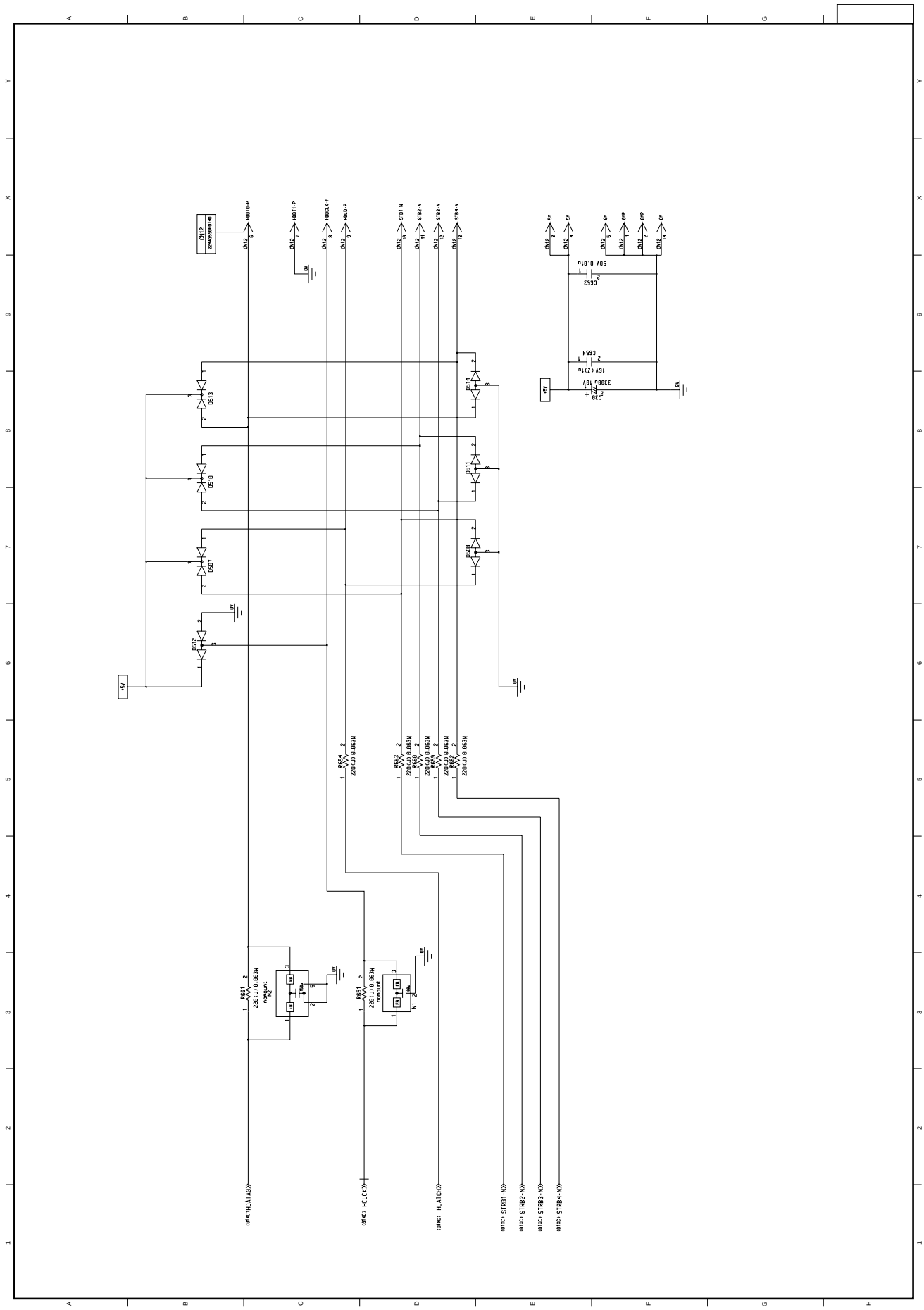
46F-PCB Circuit Diagram (3/13)
(41196601SS)



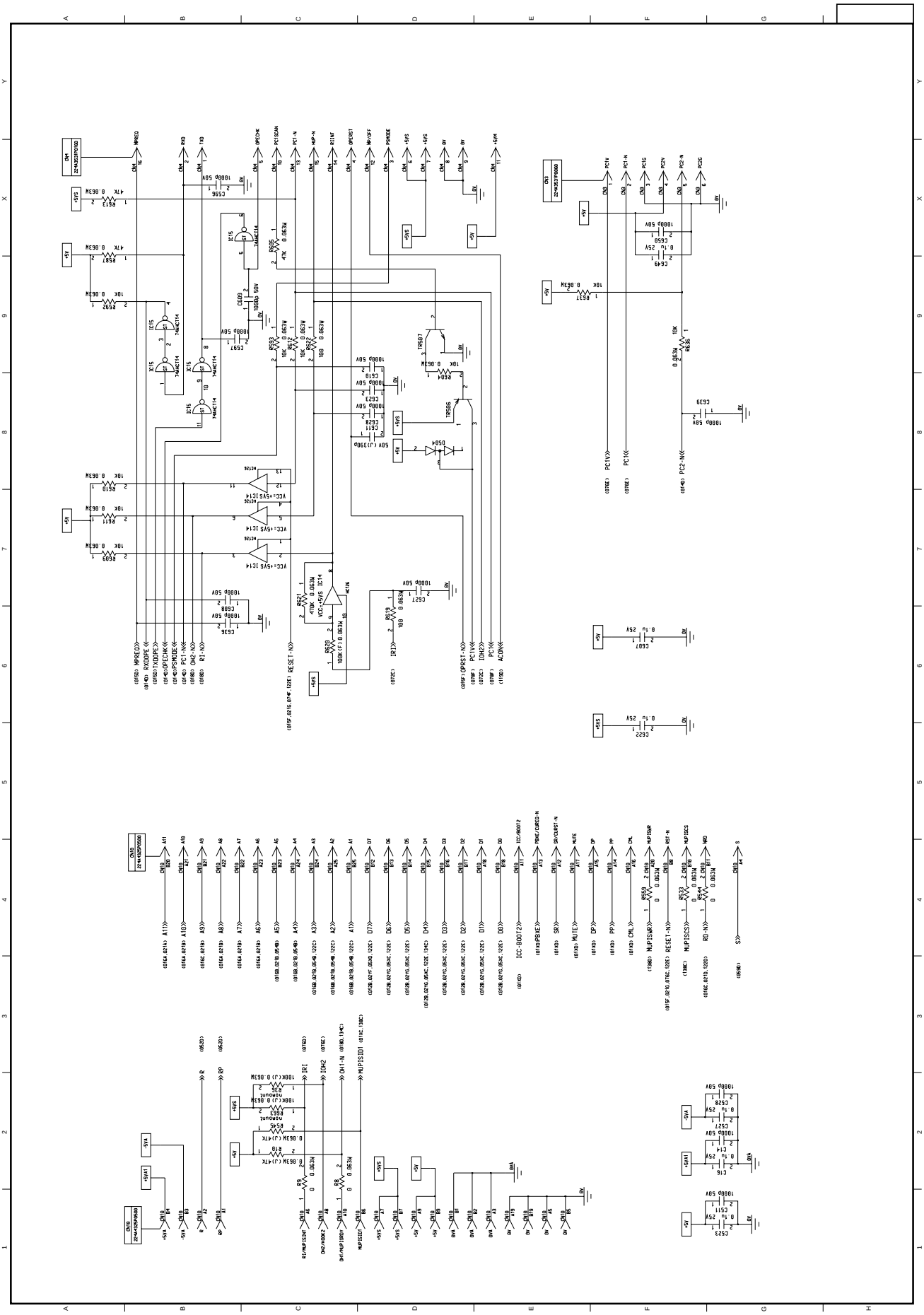
46F-PCB Circuit Diagram (4/13)
(41196601SS)



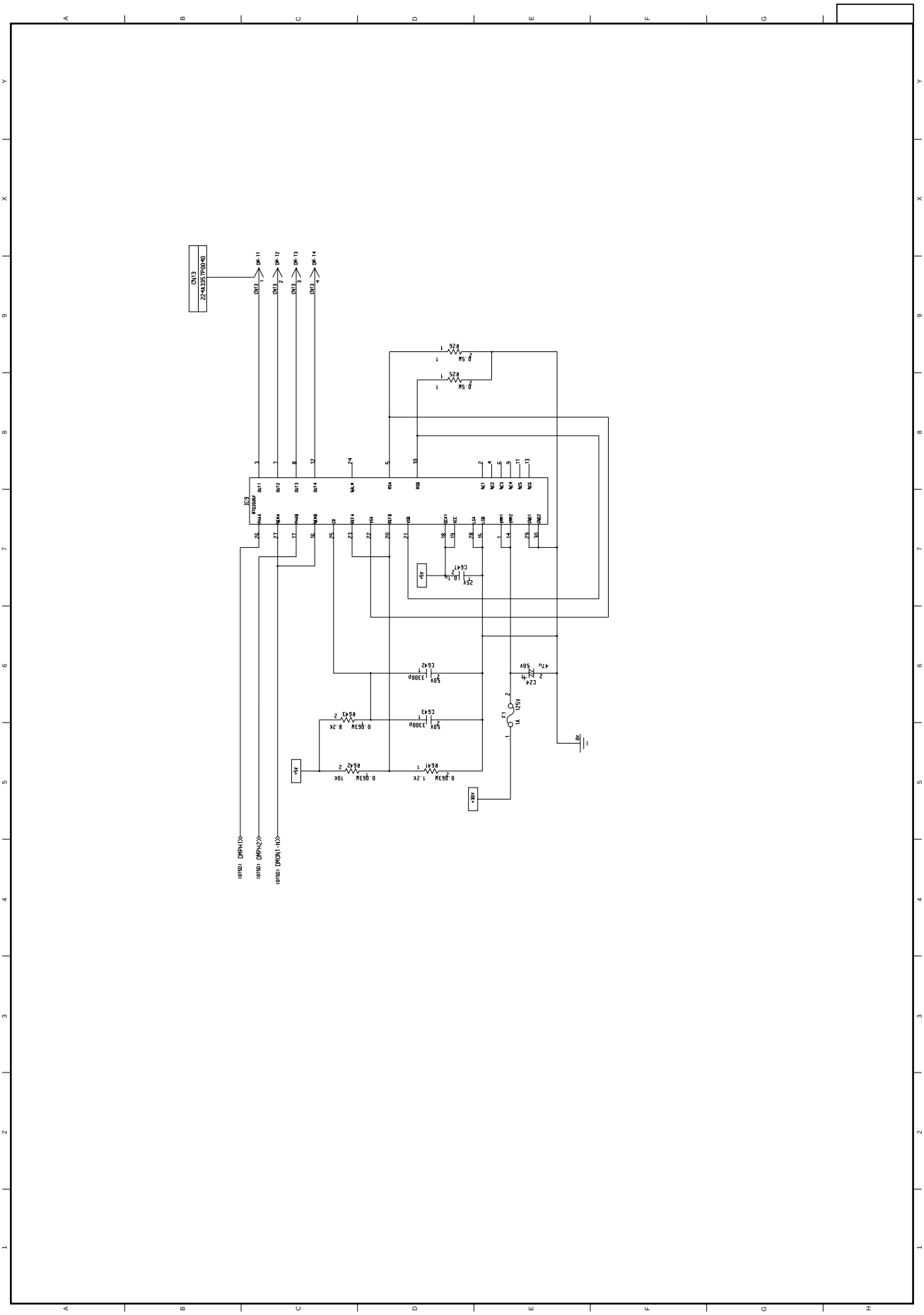
46F-PCB Circuit Diagram (5/13)
(41196601SS)



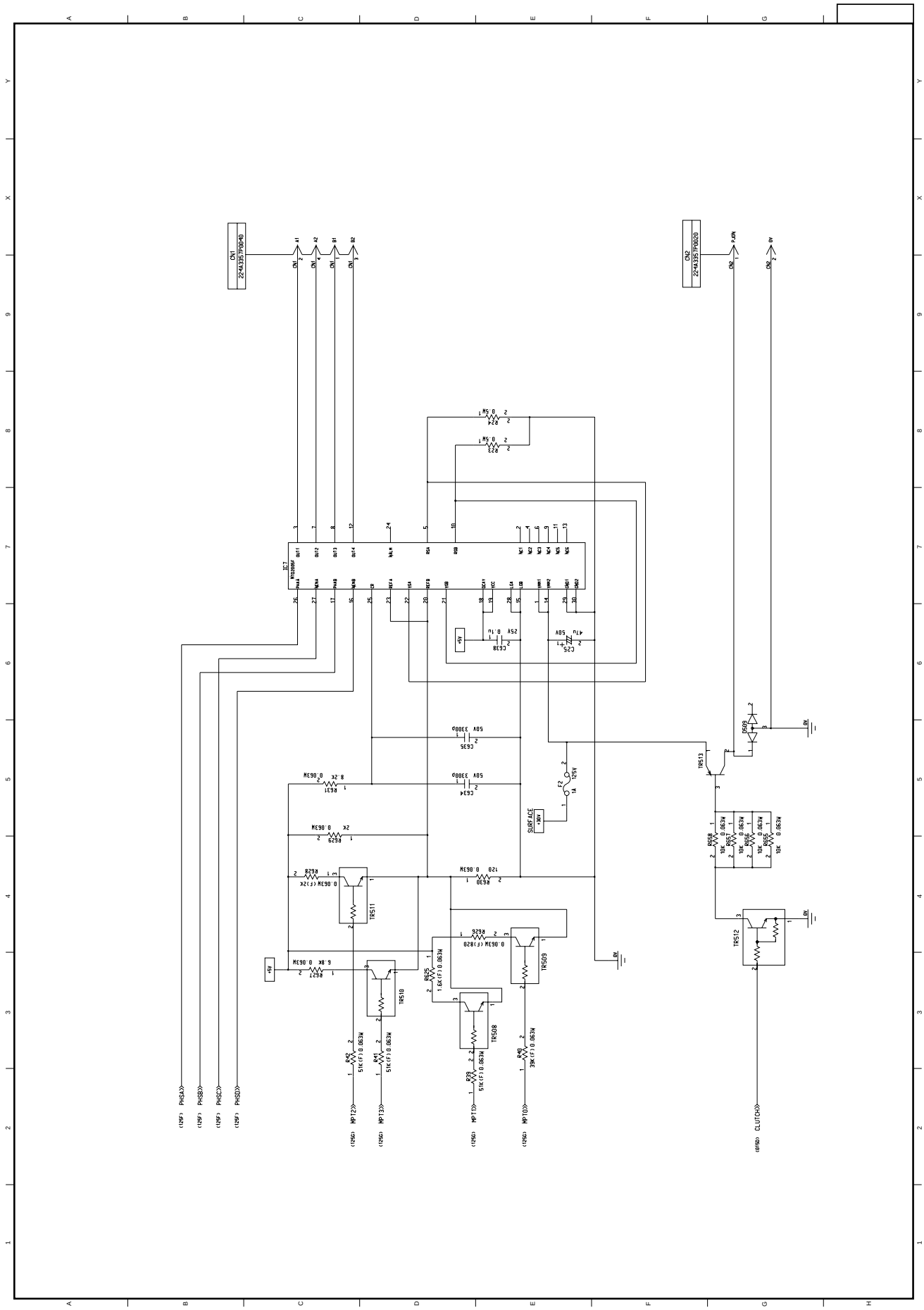
46F-PCB Circuit Diagram (6/13)
(41196601SS)



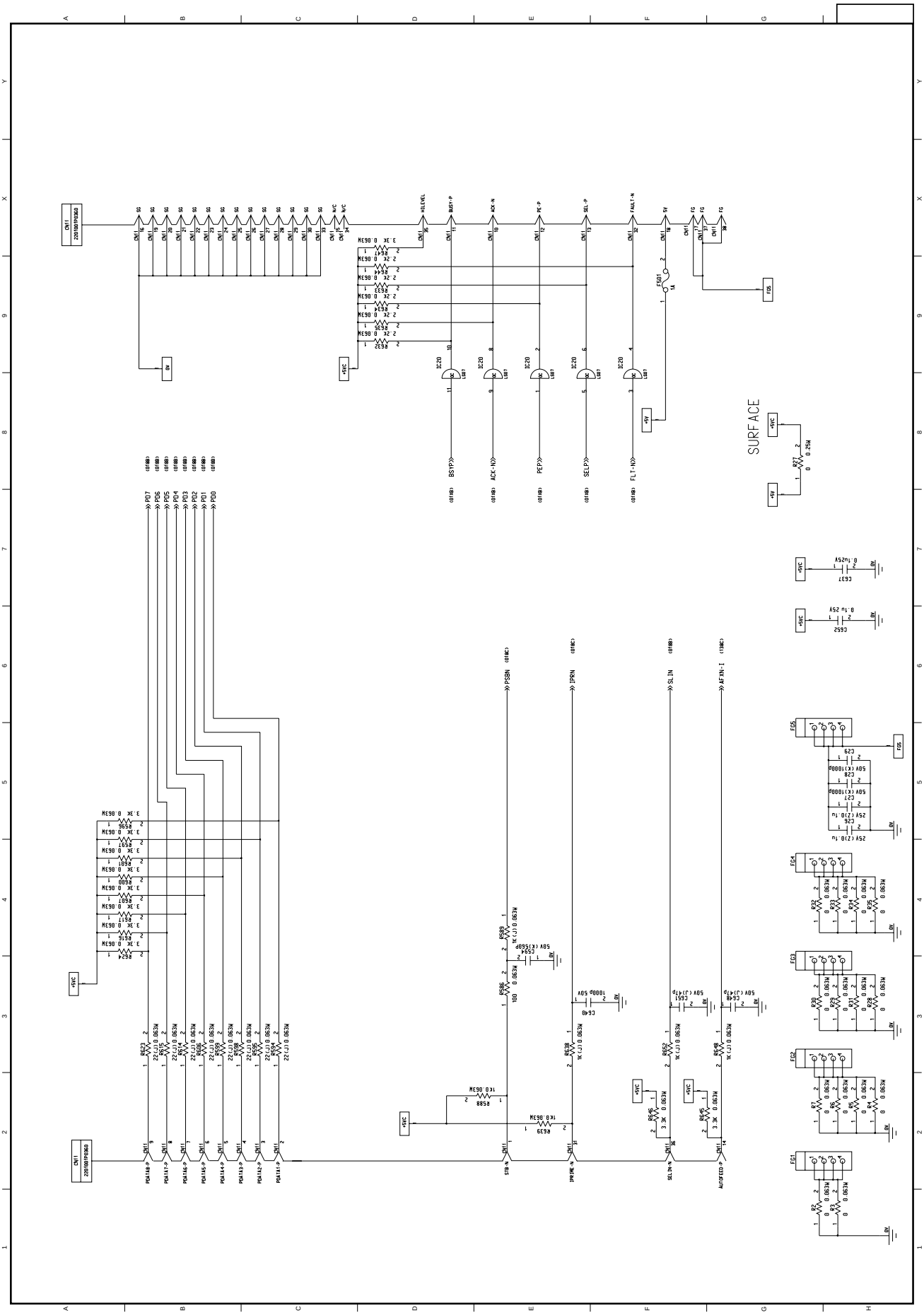
46F-PCB Circuit Diagram (7/13)
(41196601SS)



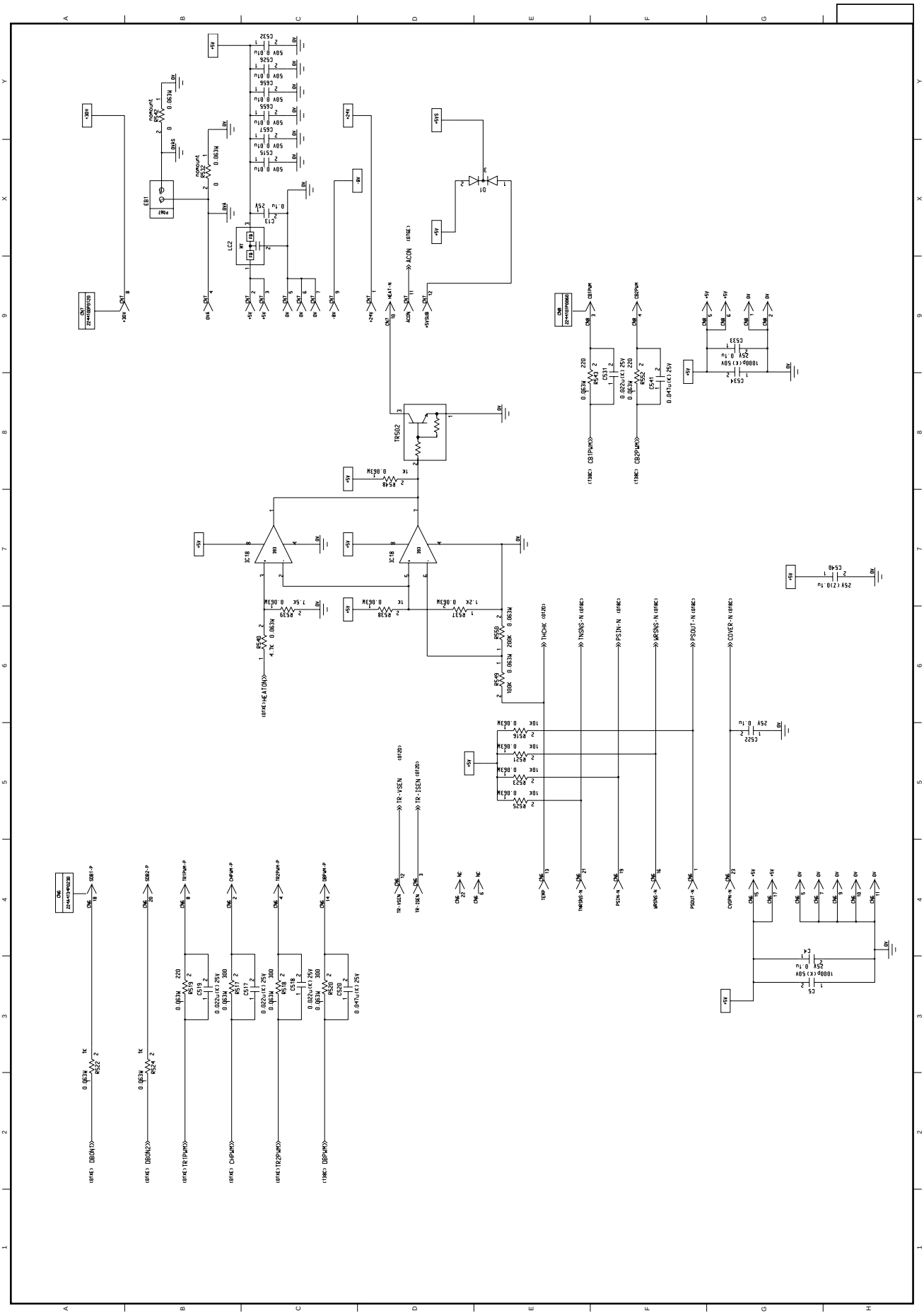
46F-PCB Circuit Diagram (8/13)
(41196601SS)



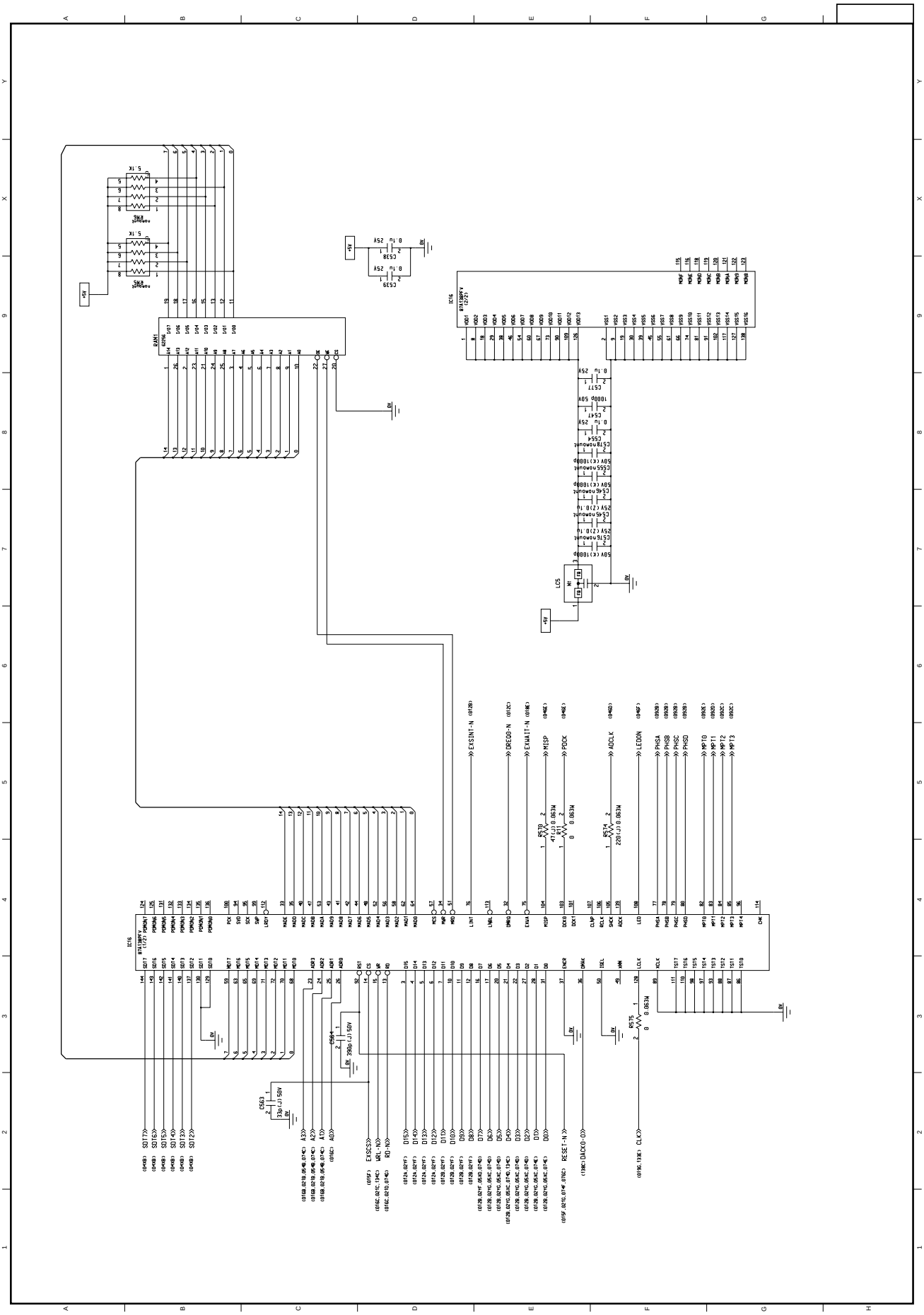
46F-PCB Circuit Diagram (9/13)
(41196601SS)



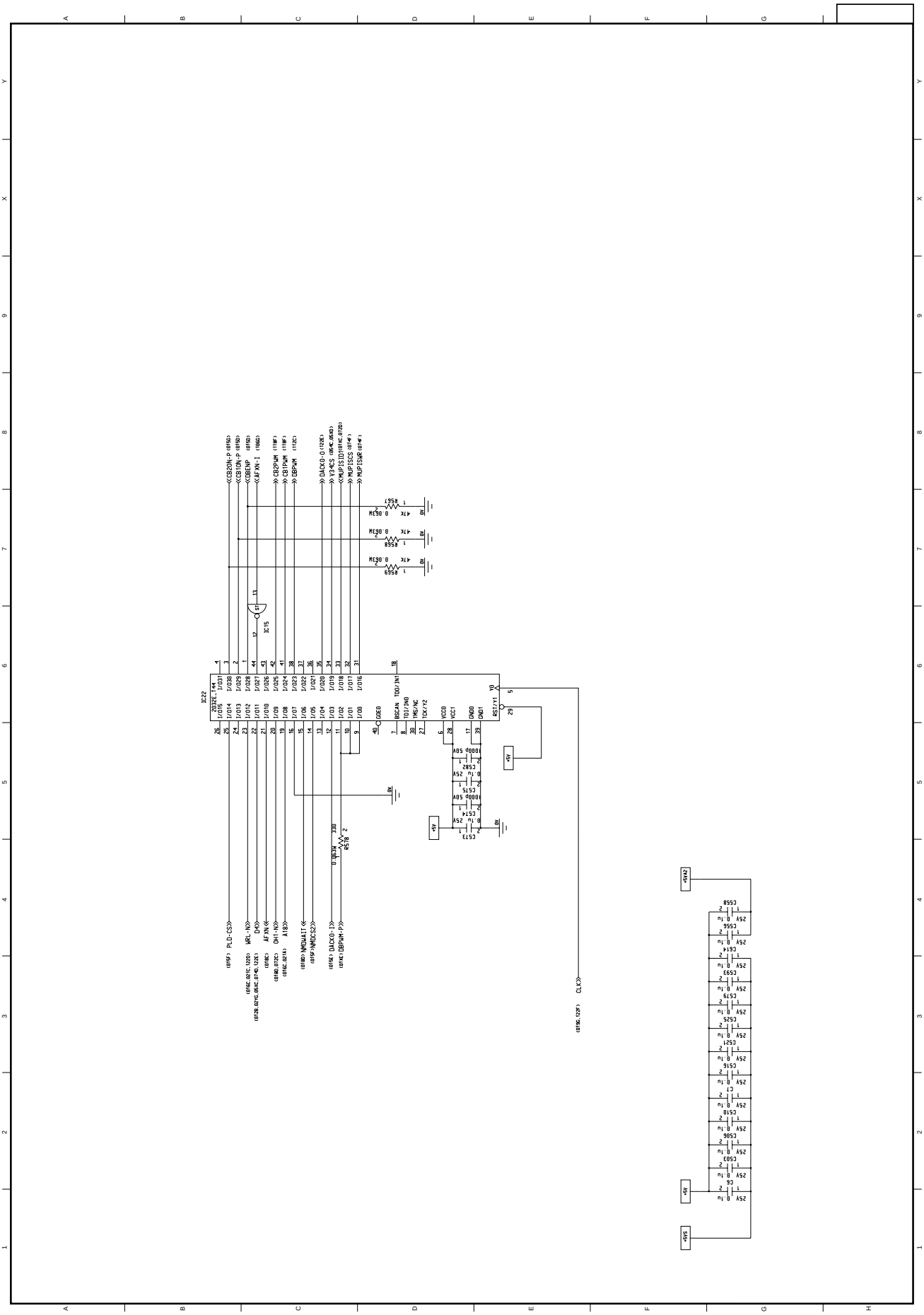
46F-PCB Circuit Diagram (10/13)
(41196601SS)



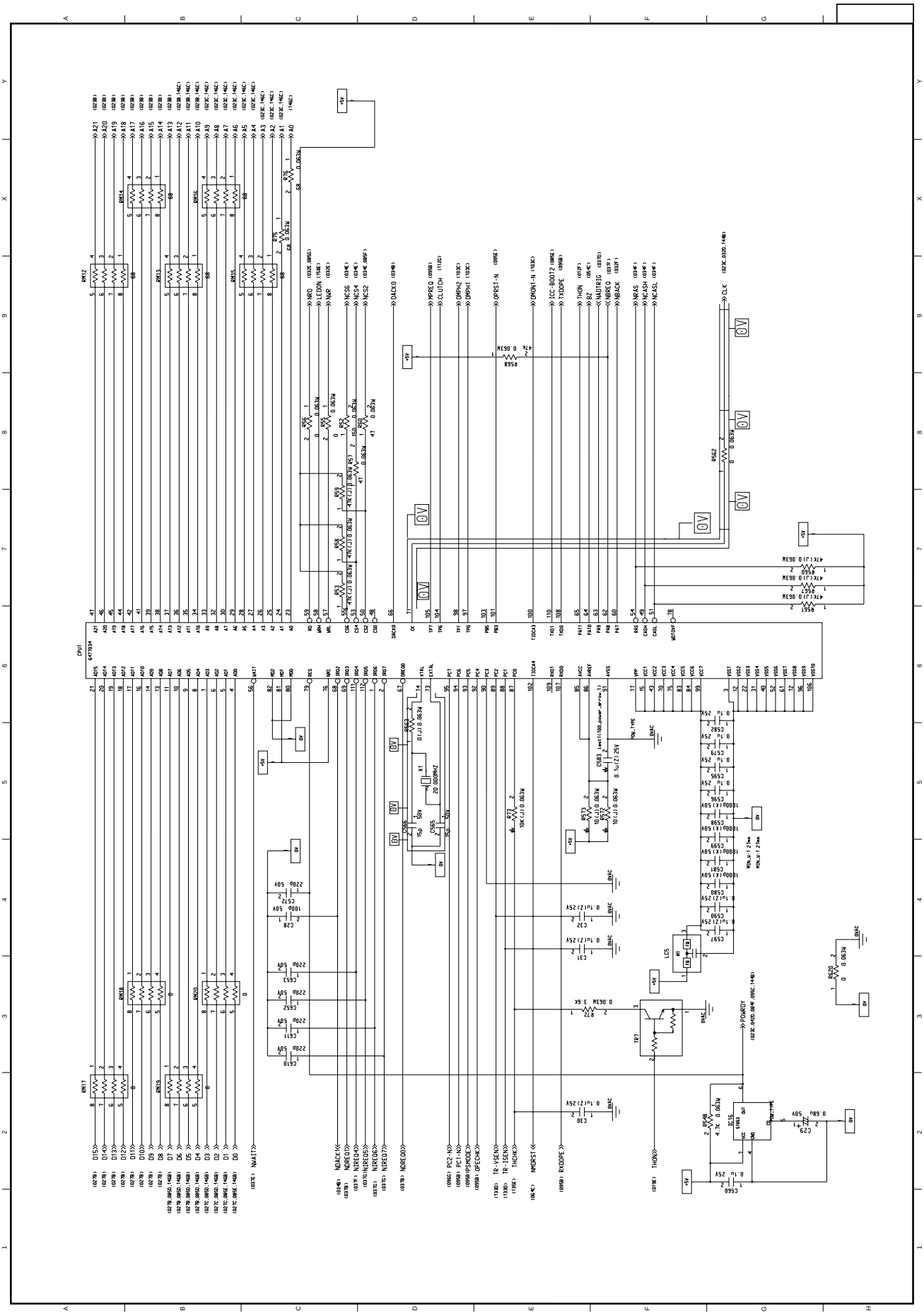
46F-PCB Circuit Diagram (11/13)
(41196601SS)



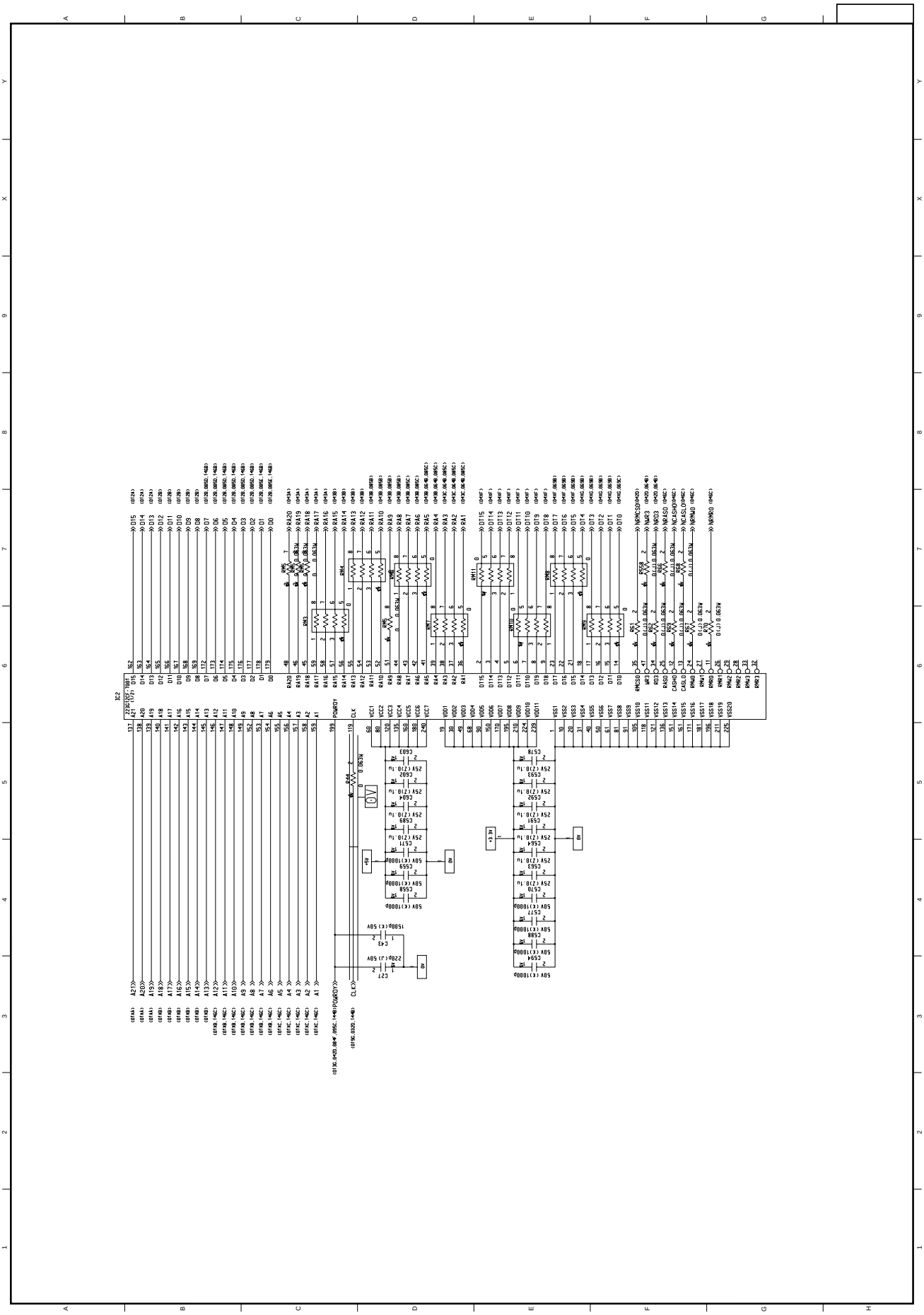
46F-PCB Circuit Diagram (12/13)
(41196601SS)



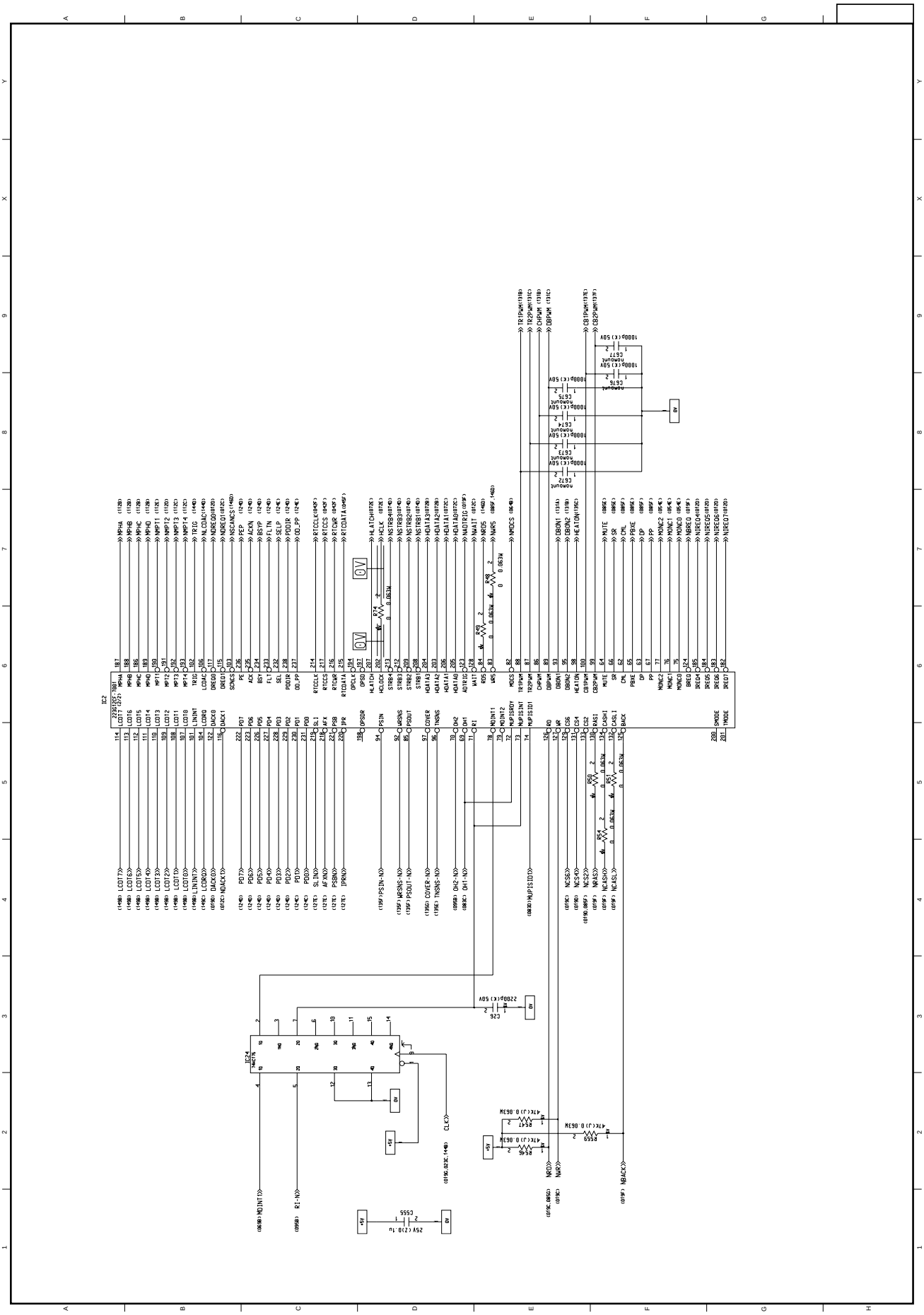
46F-PCB Circuit Diagram (13/13)
(41196601SS)



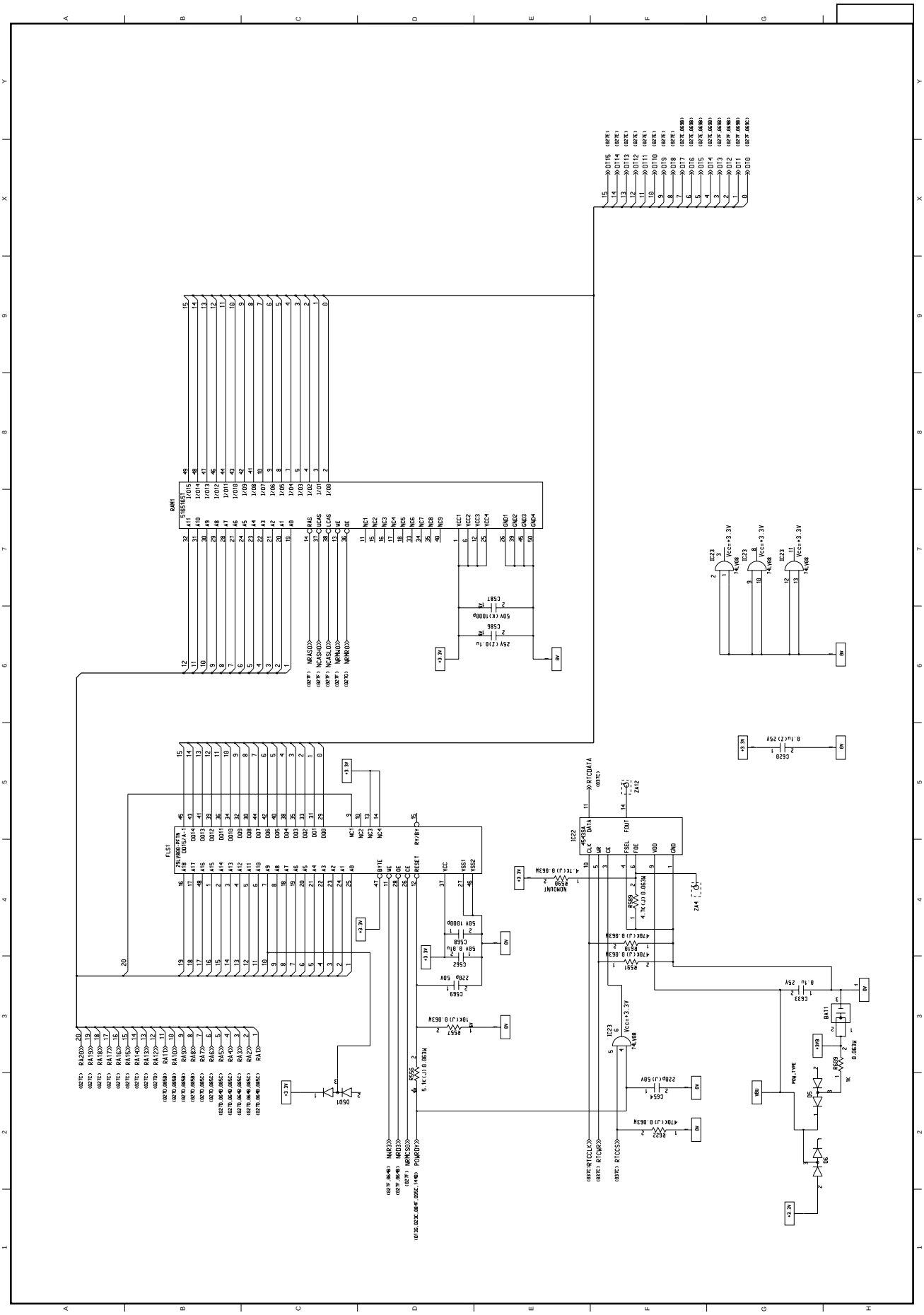
R46-PCB Circuit Diagram (1/15)
(41033201SS)



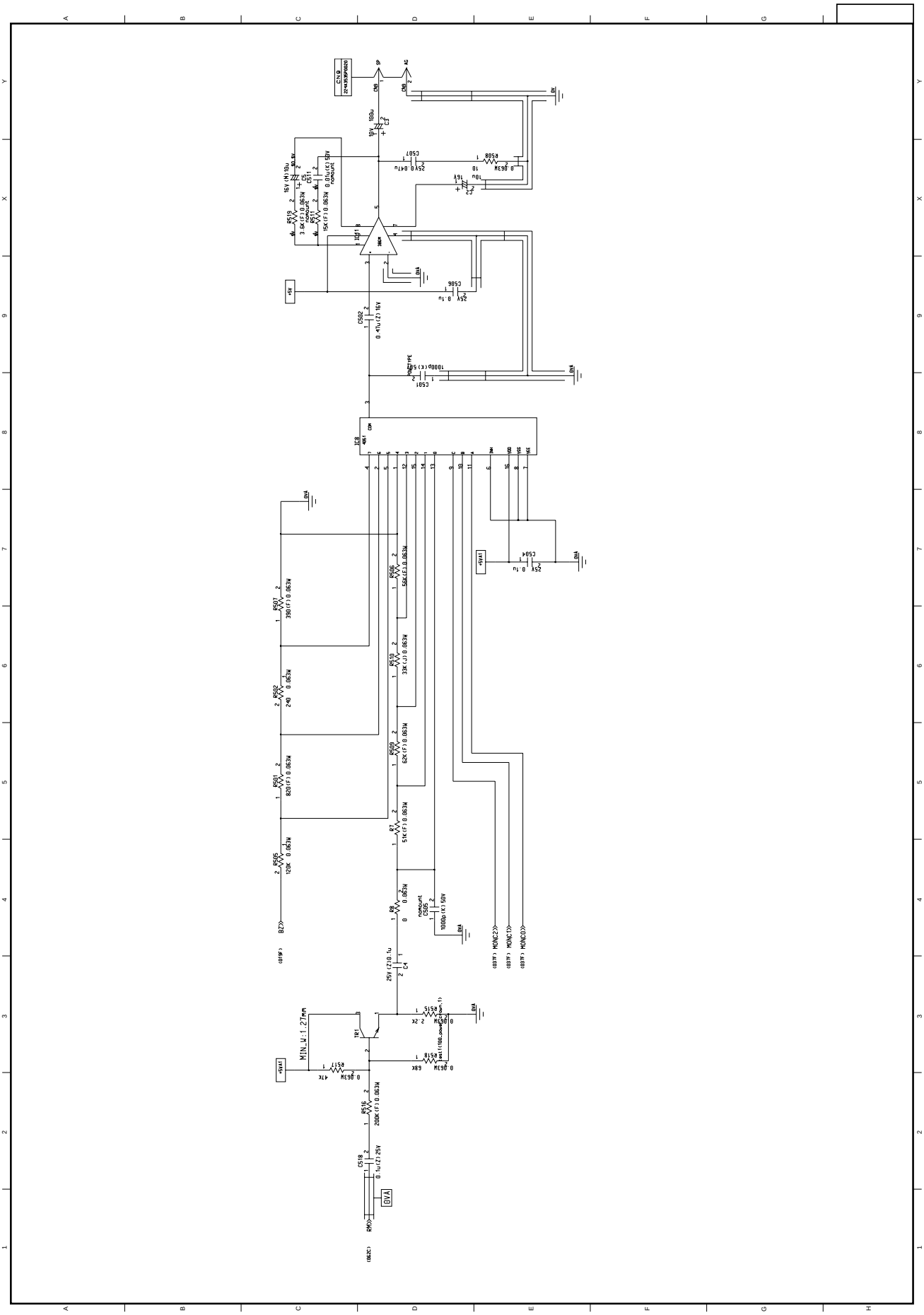
R46-PCB Circuit Diagram (2/15)
(41033201SS)



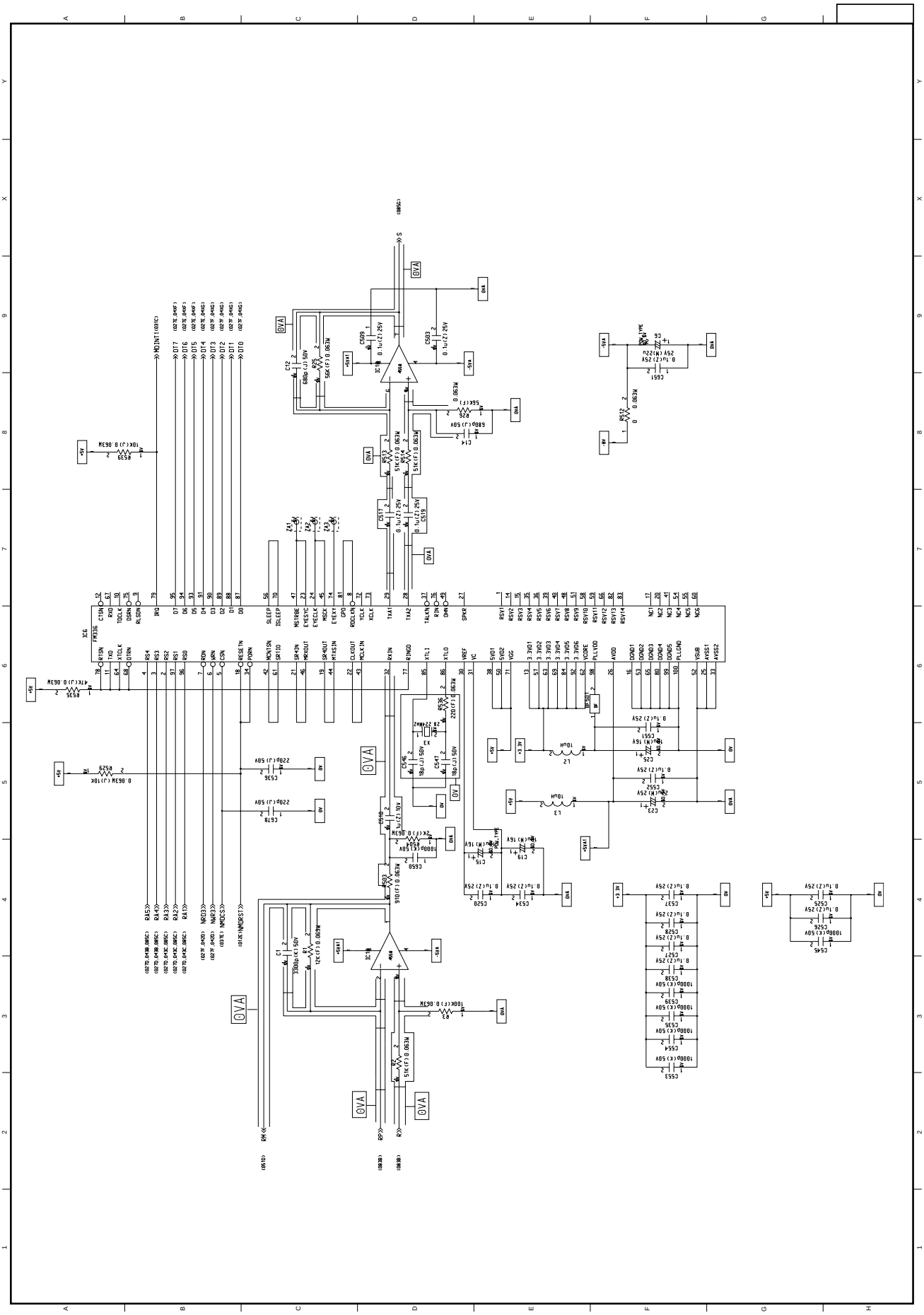
R46-PCB Circuit Diagram (3/15)
(41033201SS)



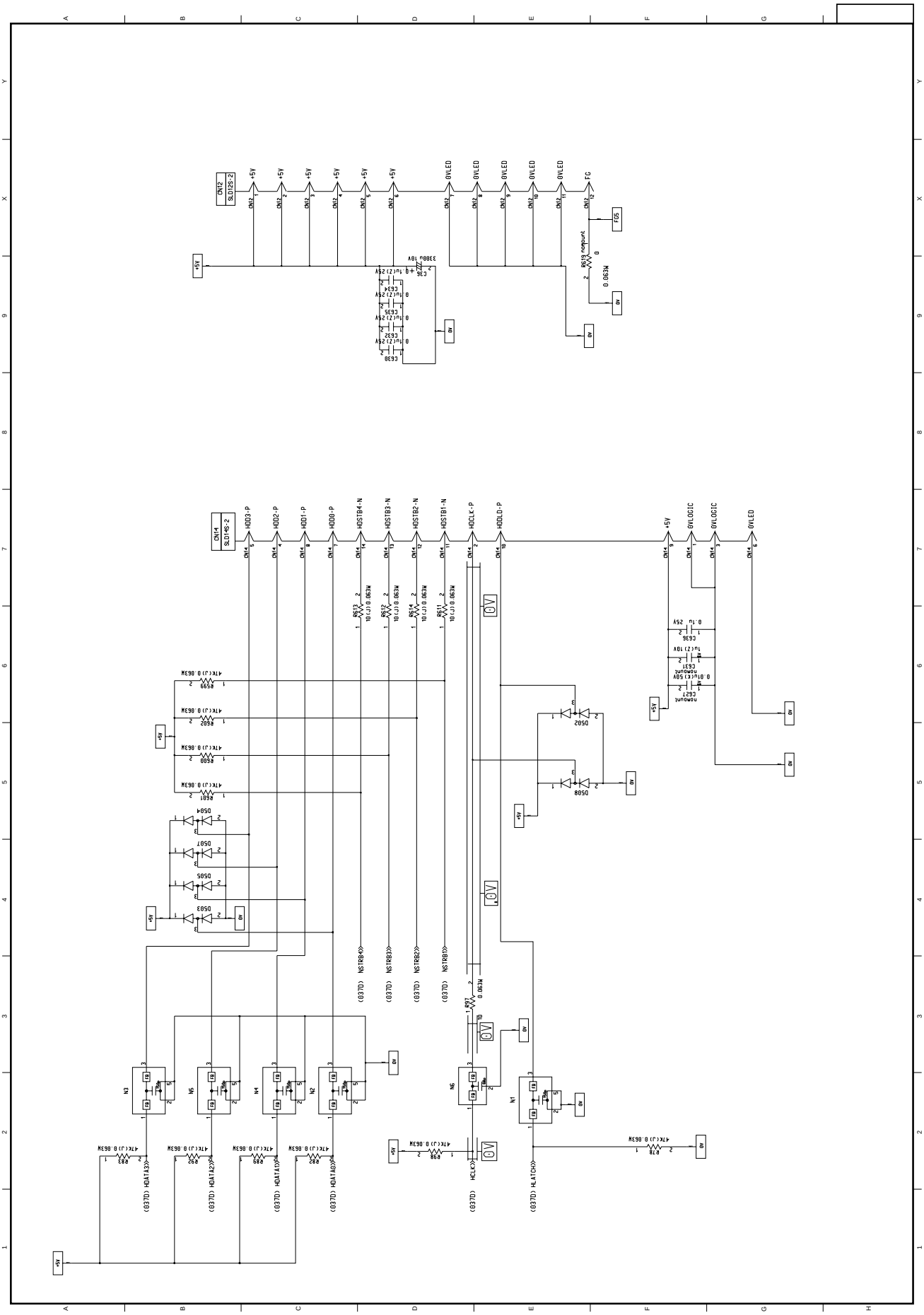
R46-PCB Circuit Diagram (4/15)
(41033201SS)



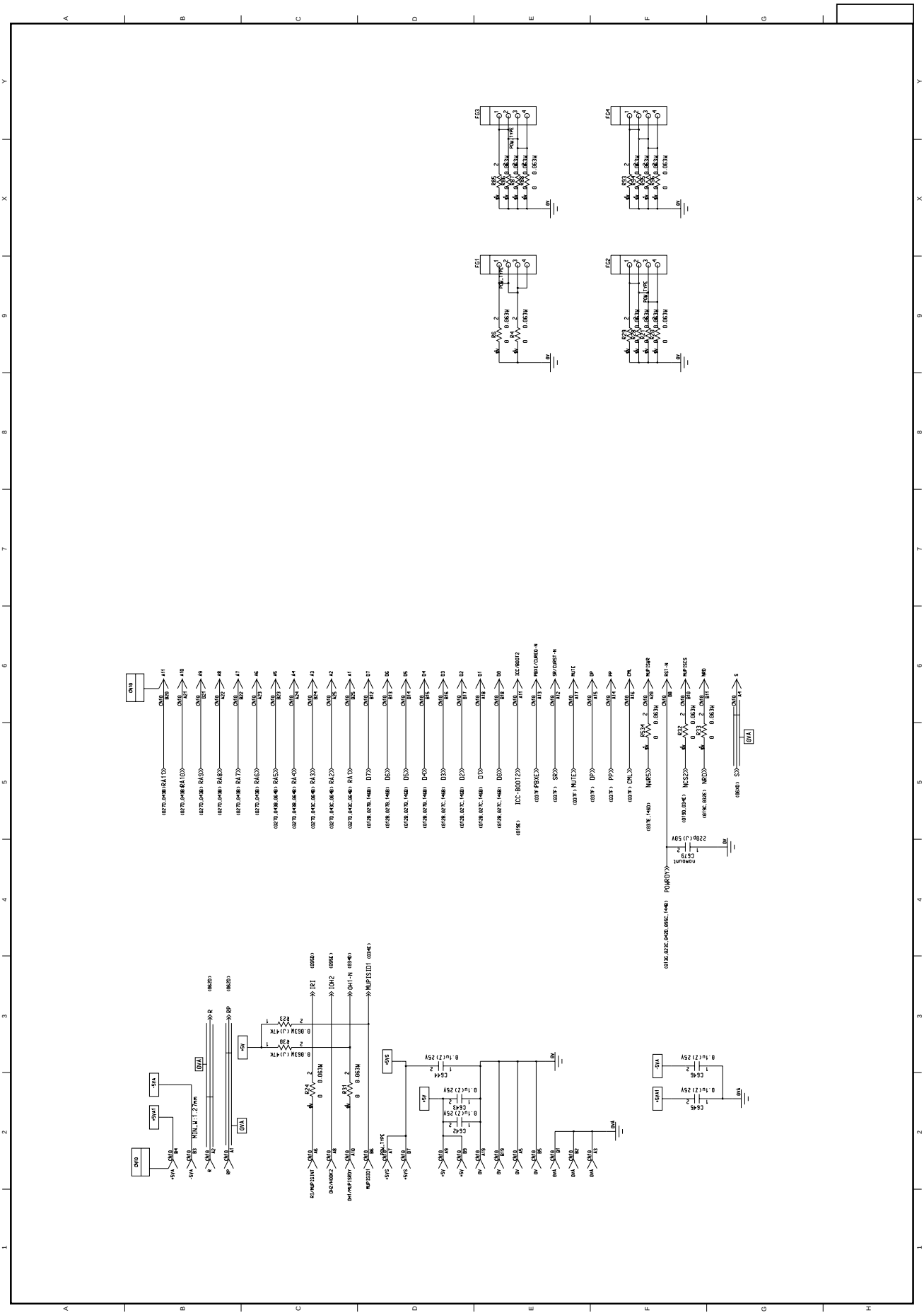
R46-PCB Circuit Diagram (5/15)
(41033201SS)



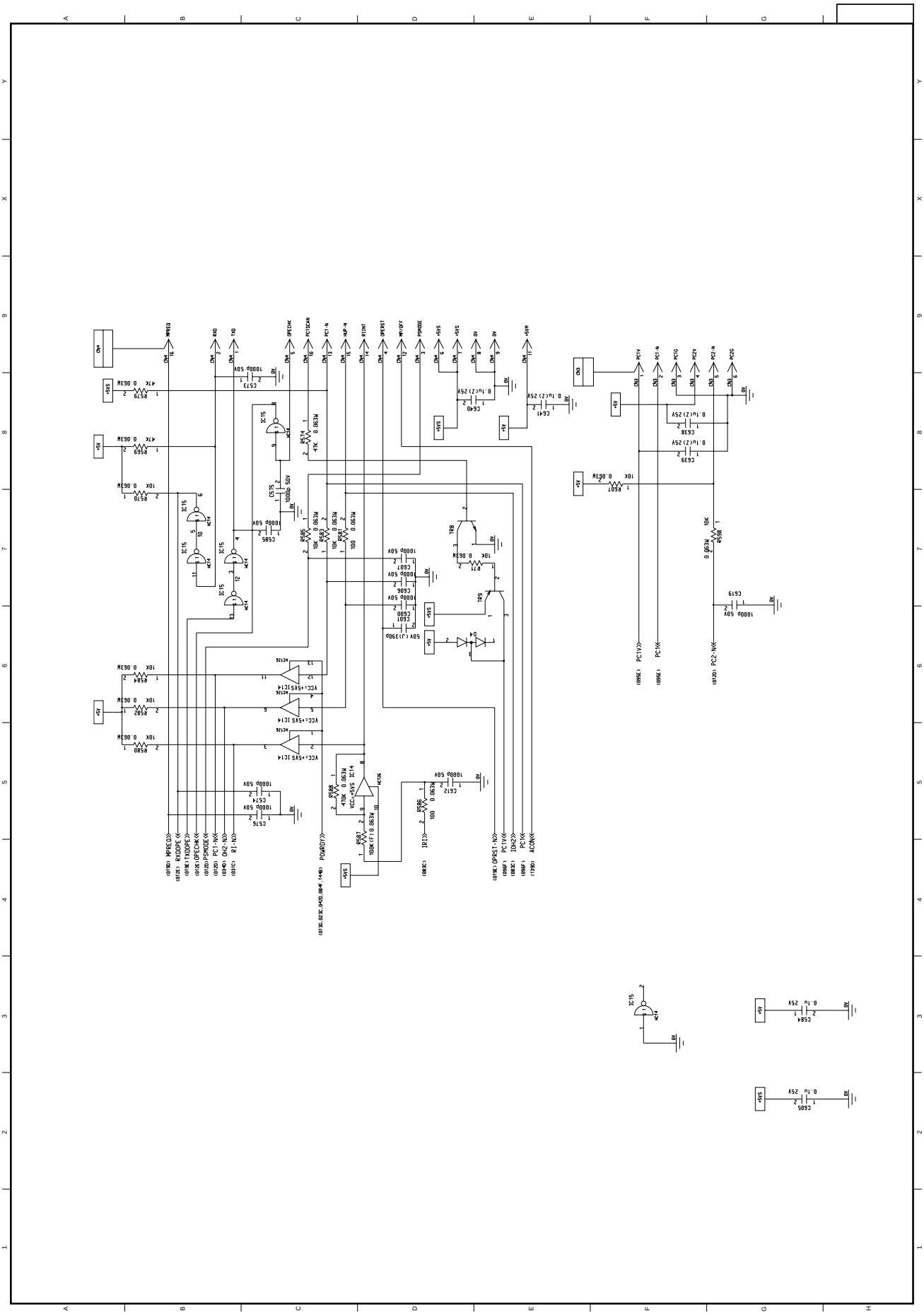
R46-PCB Circuit Diagram (6/15)
(41033201SS)



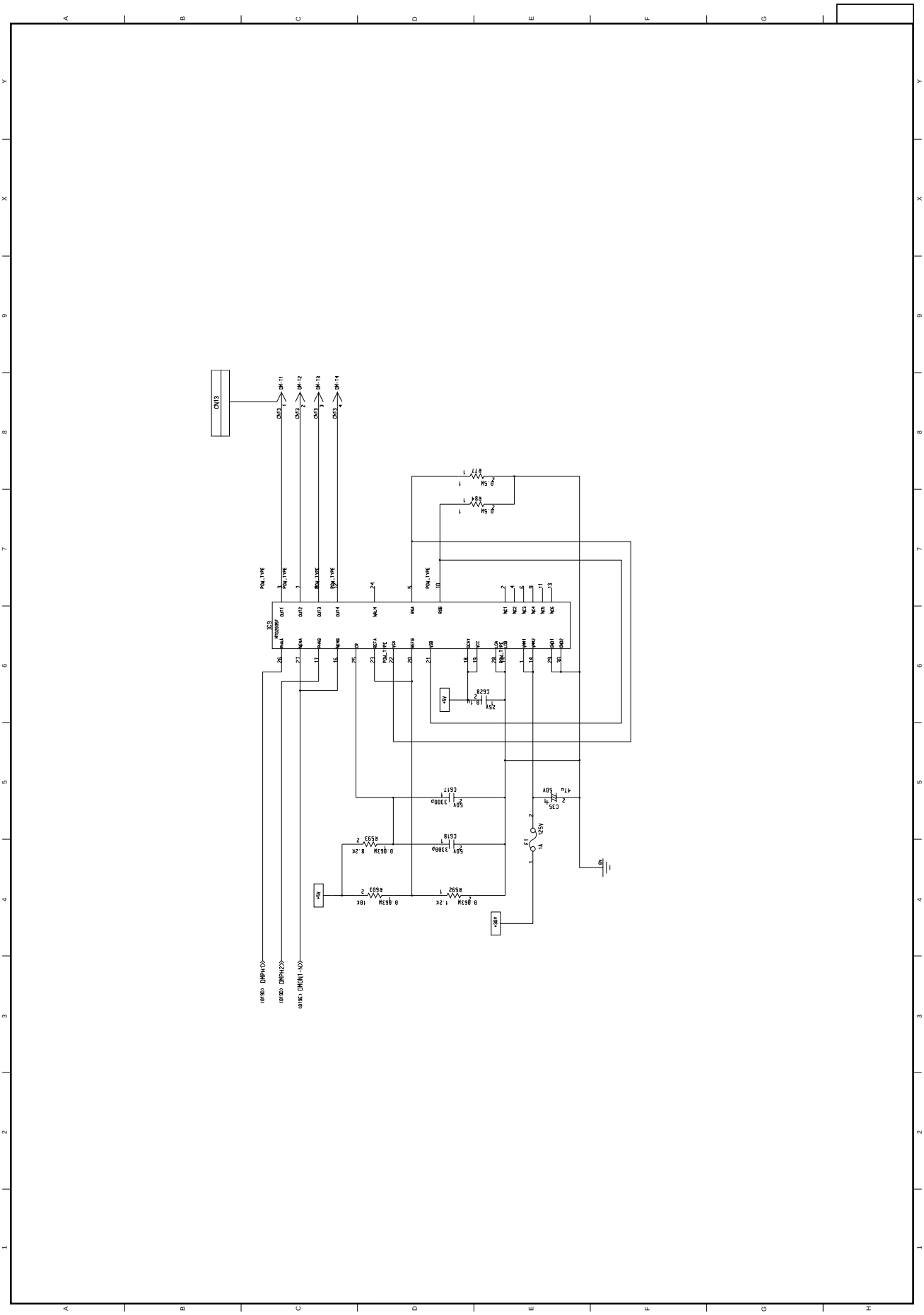
R46-PCB Circuit Diagram (7/15)
(41033201SS)



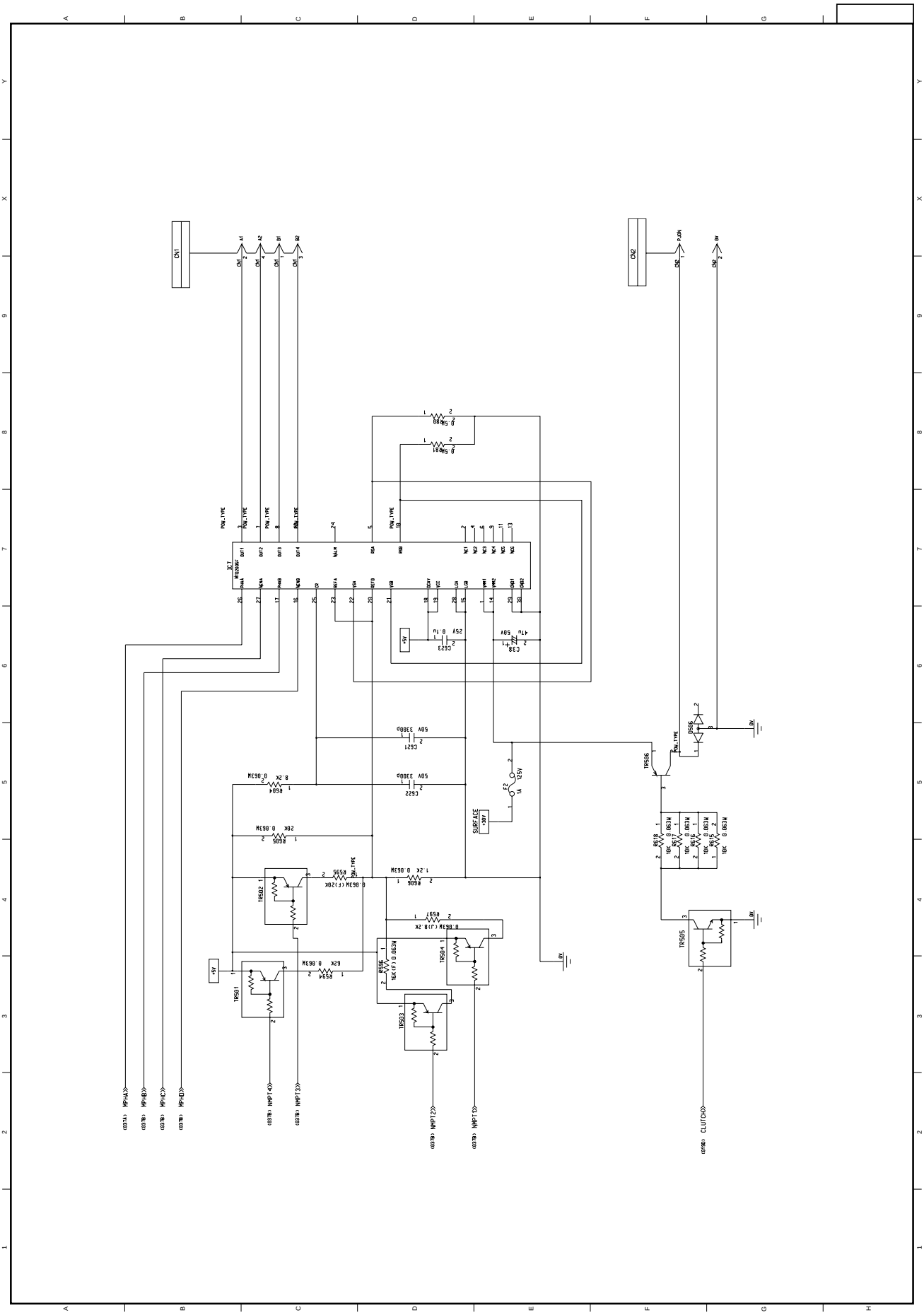
R46-PCB Circuit Diagram (8/15)
(41033201SS)



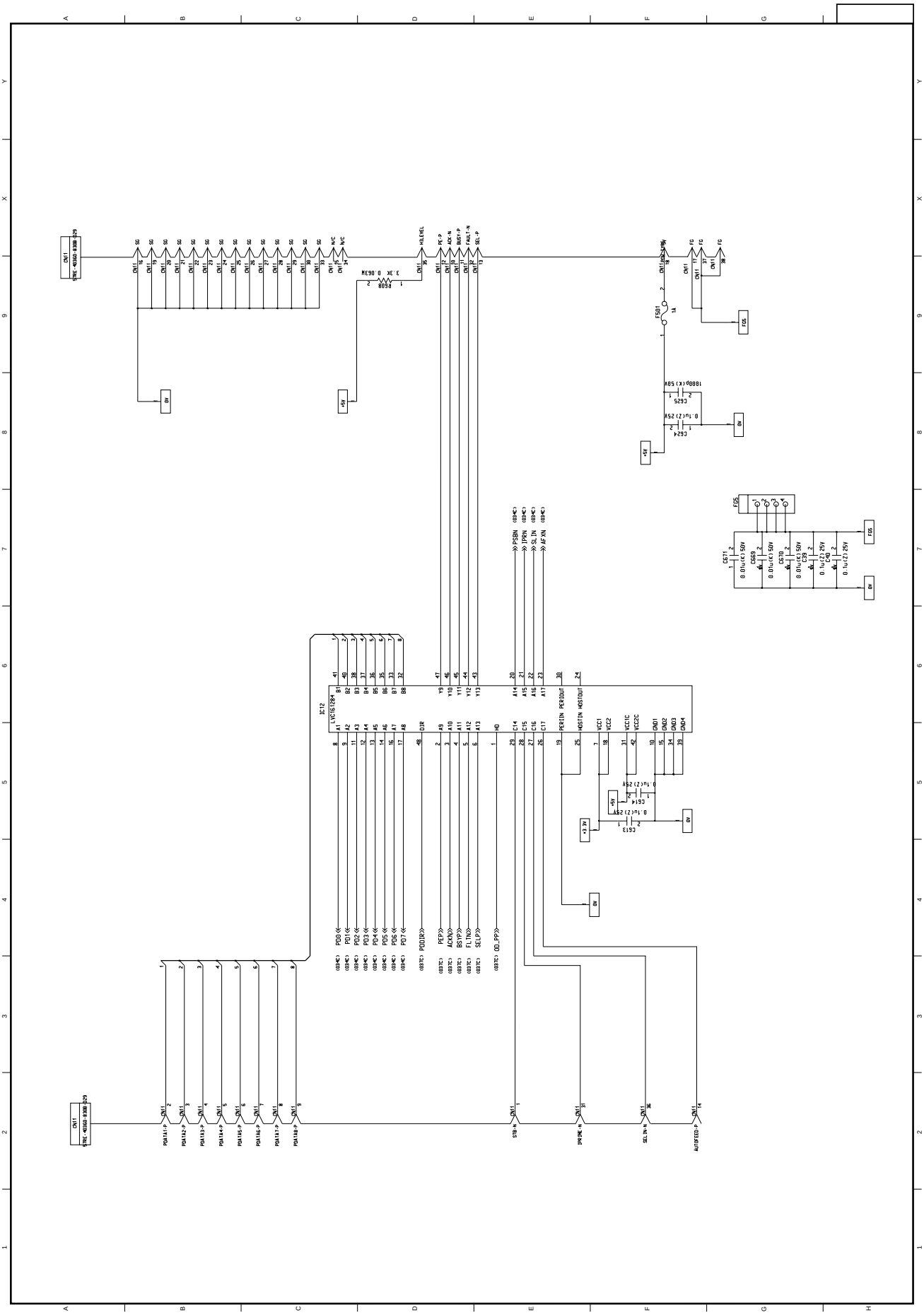
R46-PCB Circuit Diagram (9/15)
(41033201SS)



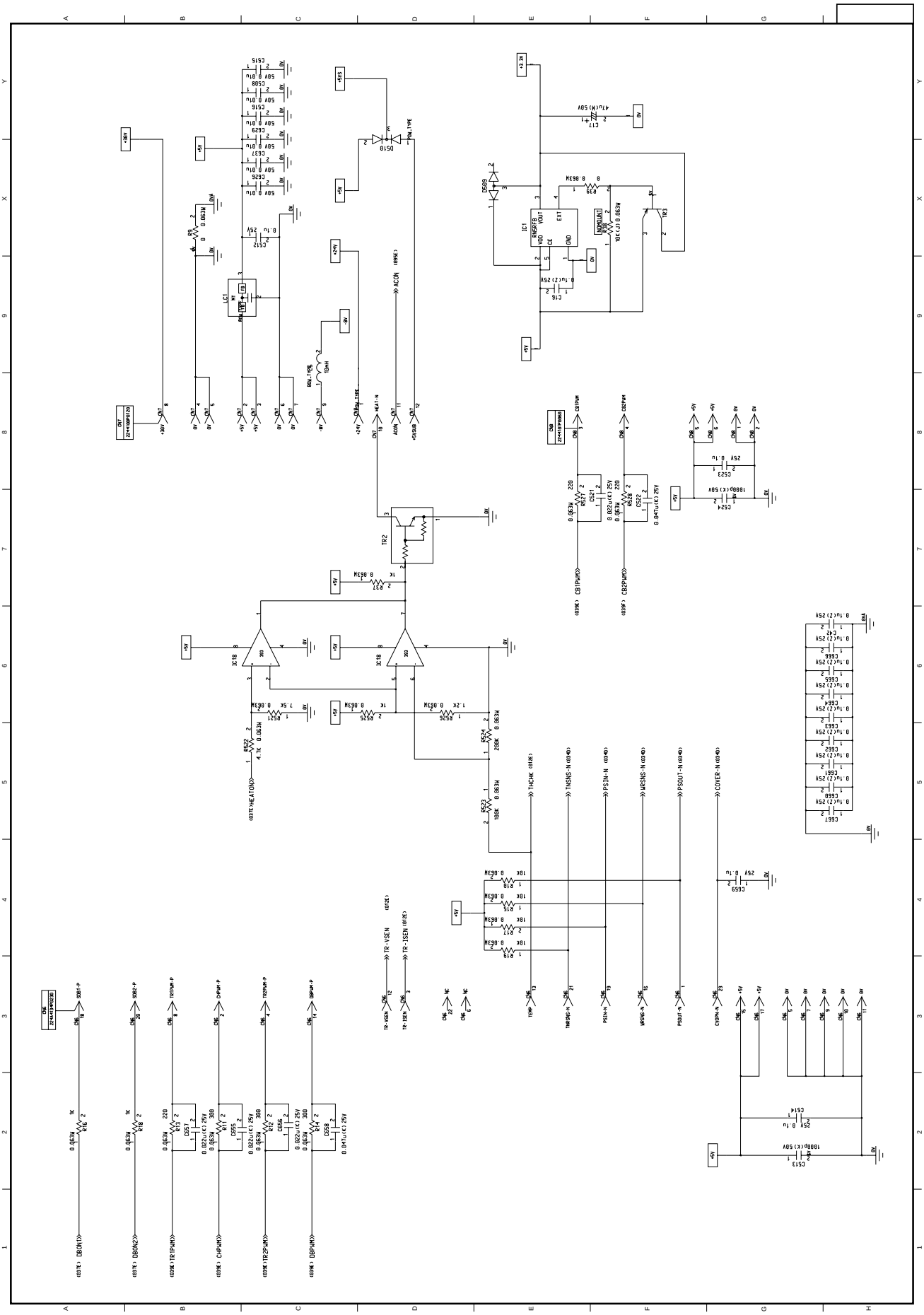
R46-PCB Circuit Diagram (10/15)
(41033201SS)



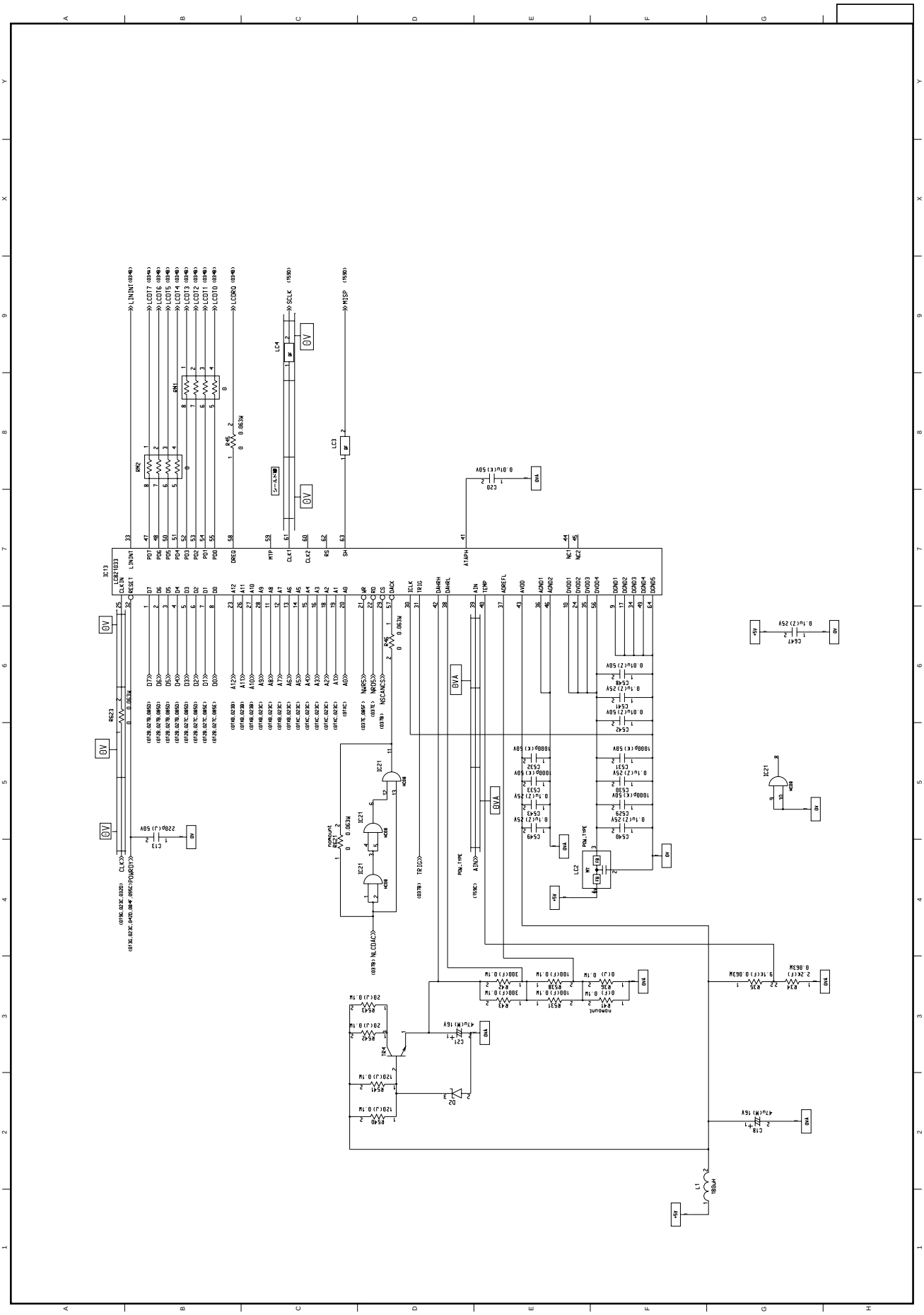
R46-PCB Circuit Diagram (11/15)
(41033201SS)



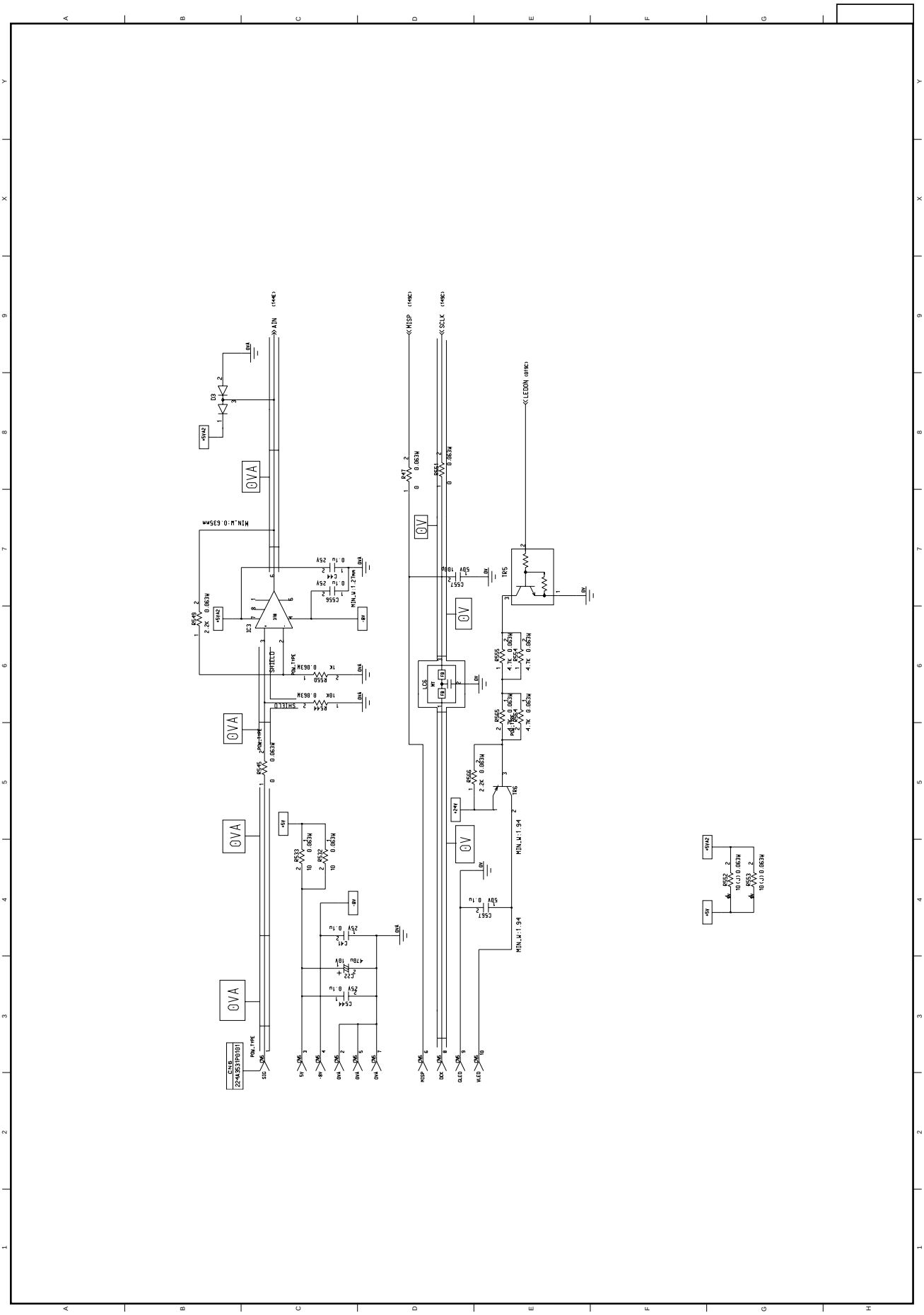
R46-PCB Circuit Diagram (12/15)
(41033201SS)



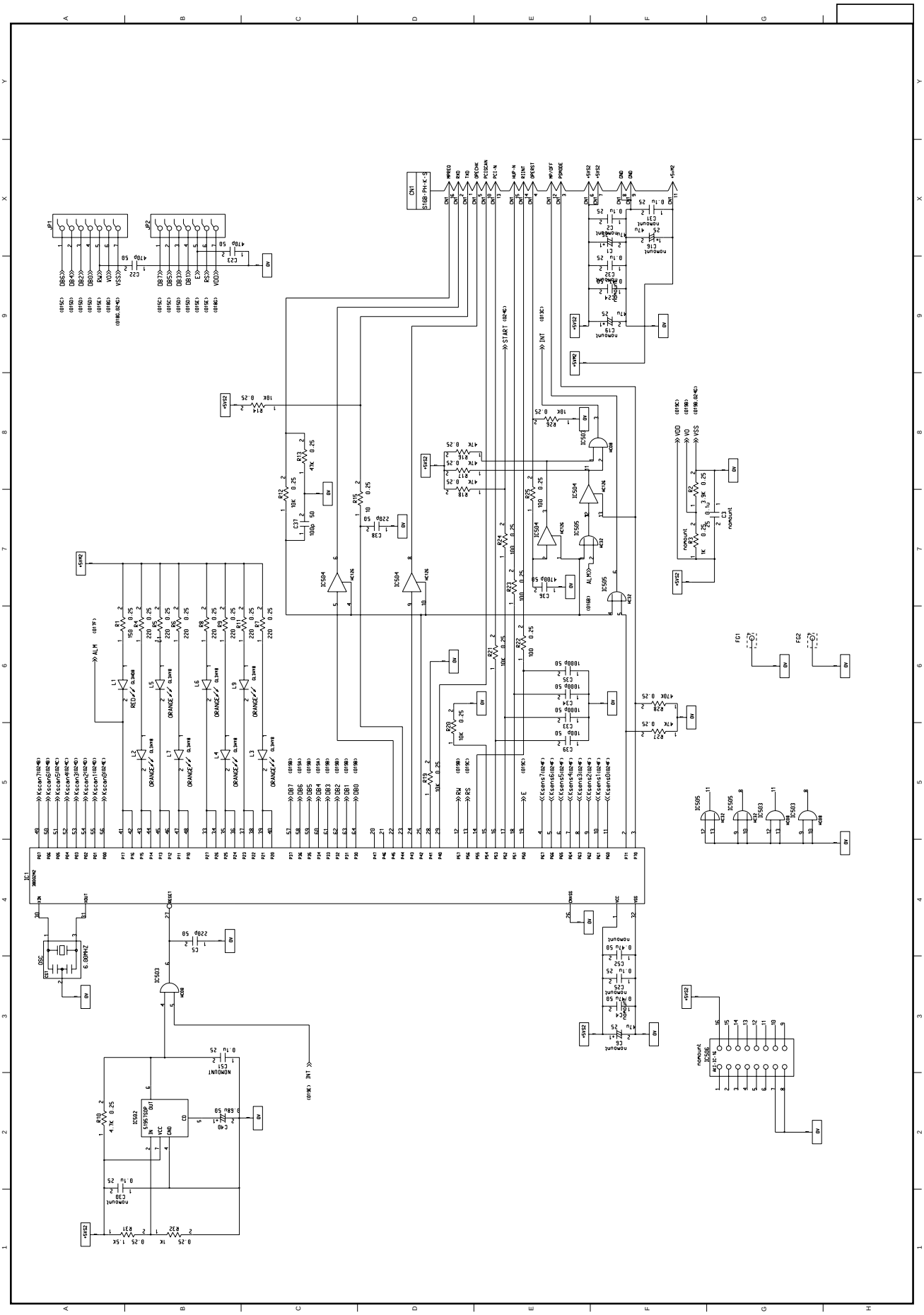
R46-PCB Circuit Diagram (13/15)
(41033201SS)



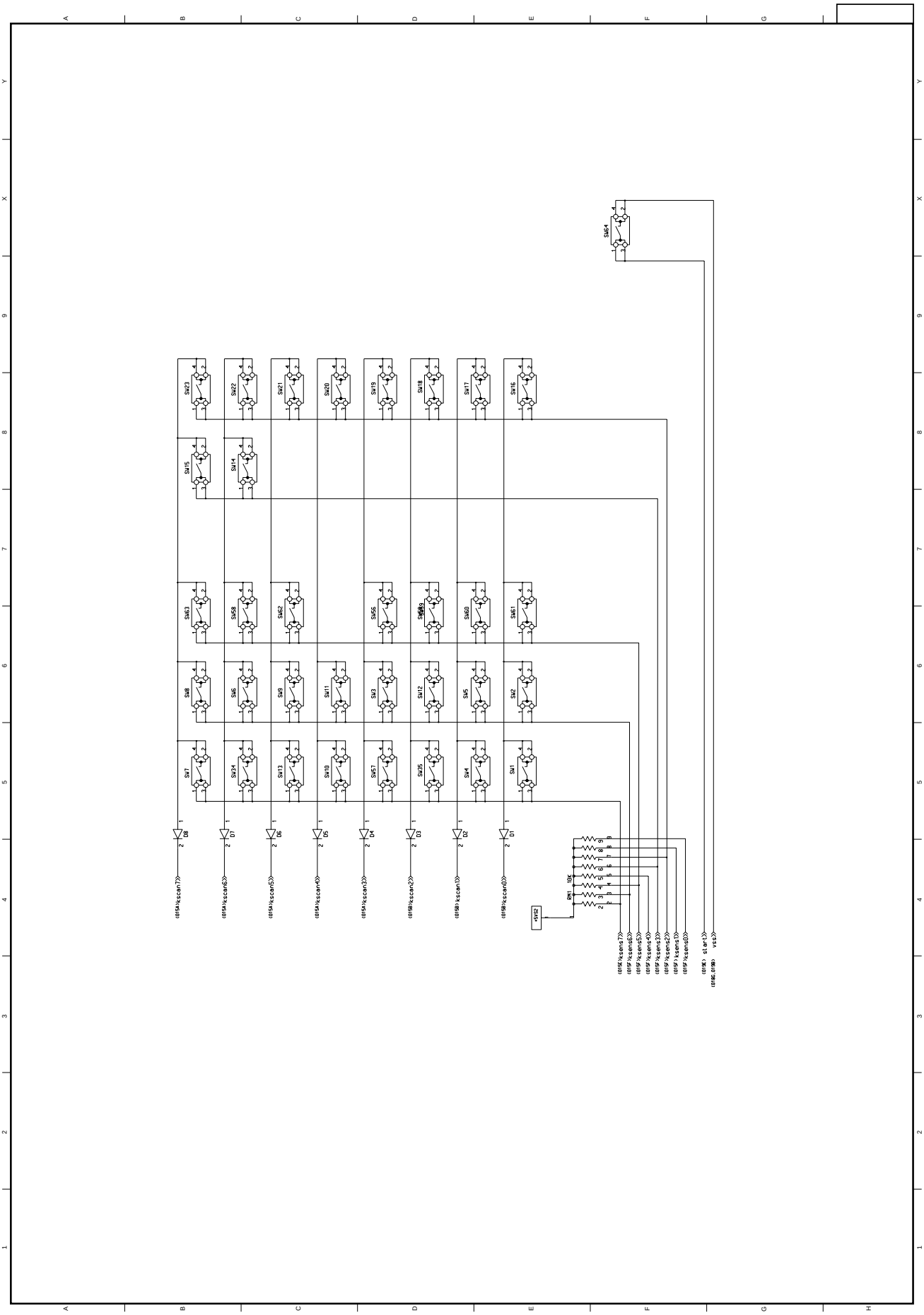
R46-PCB Circuit Diagram (14/15)
(41033201SS)



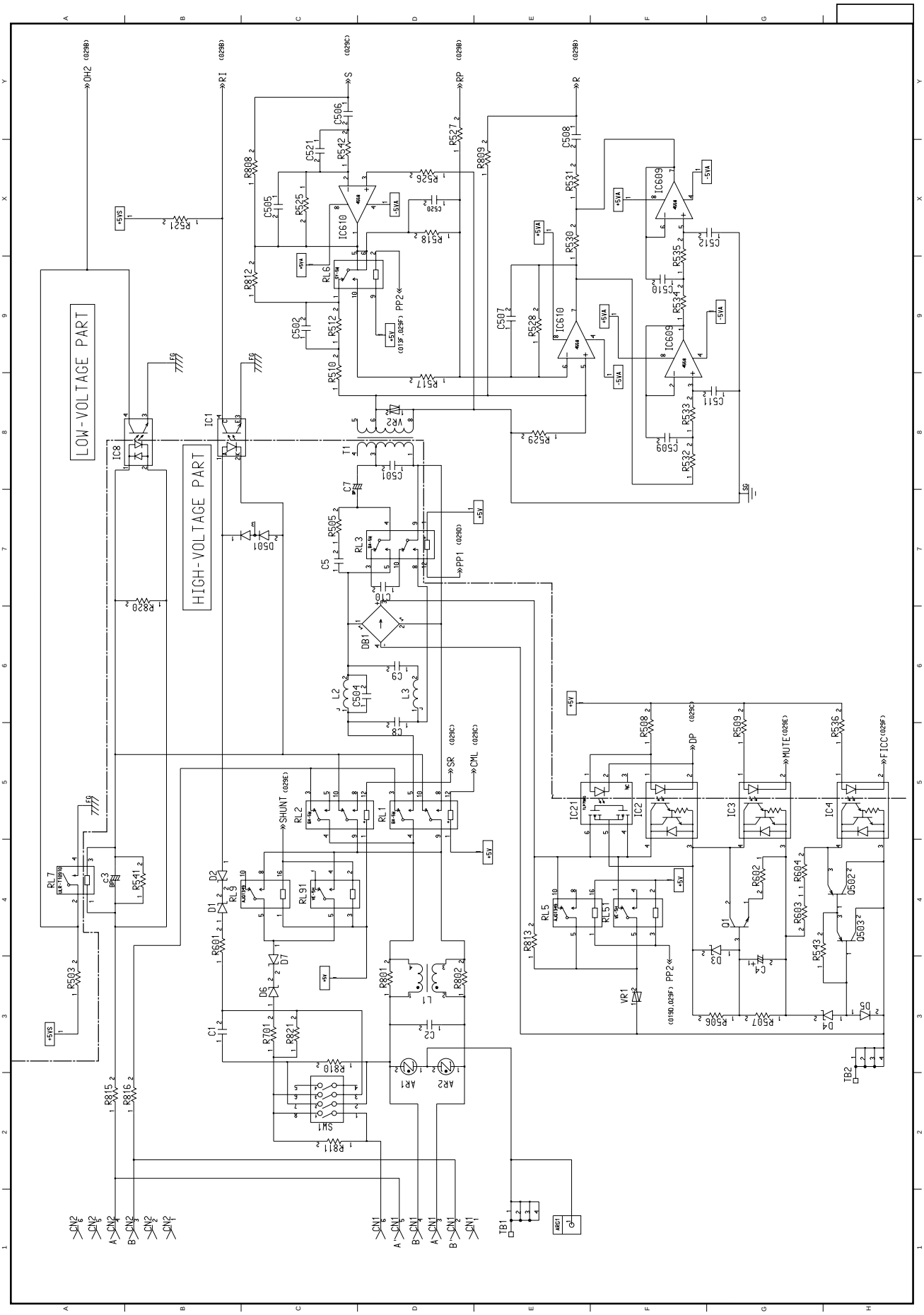
R46-PCB Circuit Diagram (15/15)
(41033201SS)



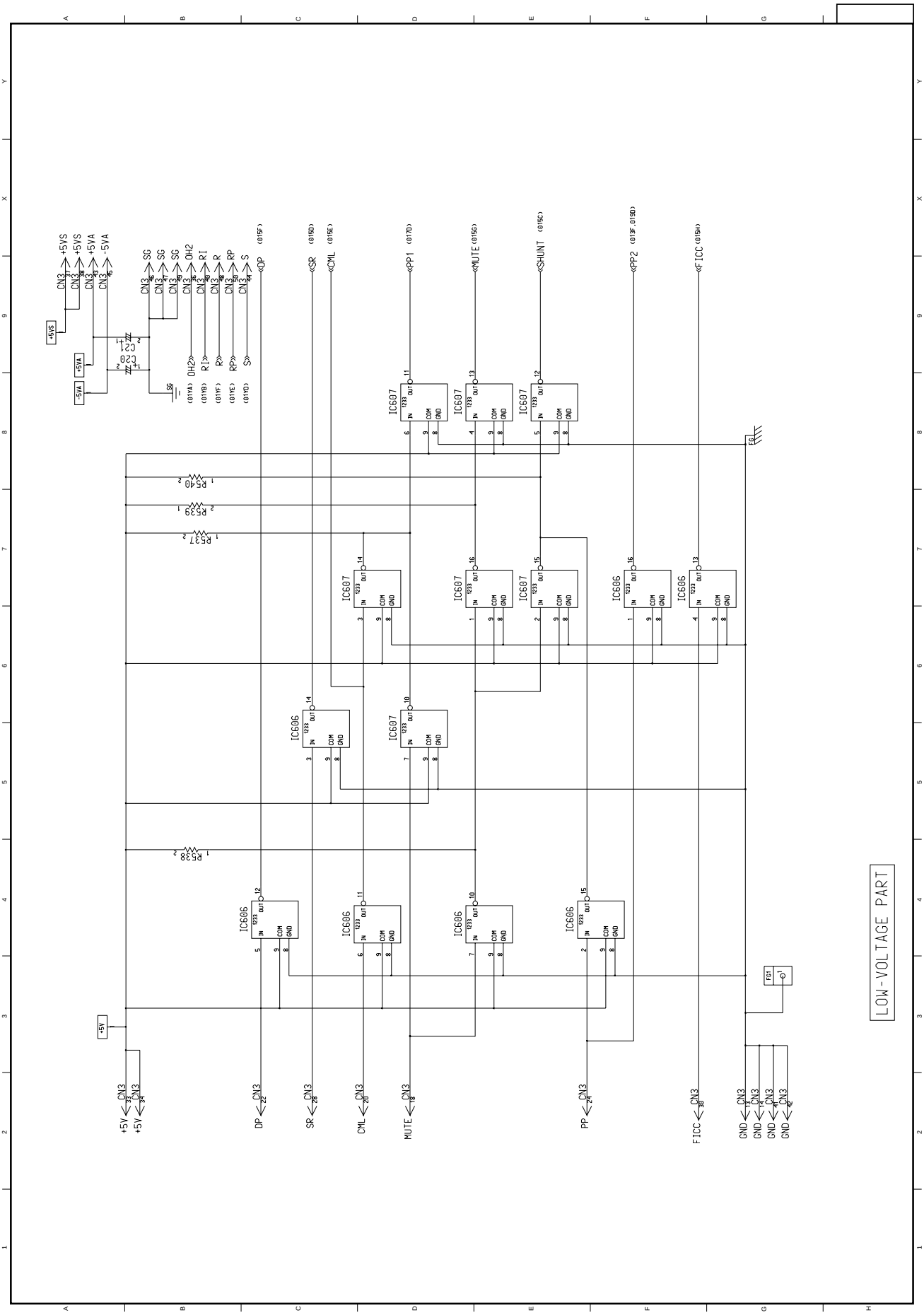
04W-PCB Circuit Diagram (1/2)
(40071401SS)



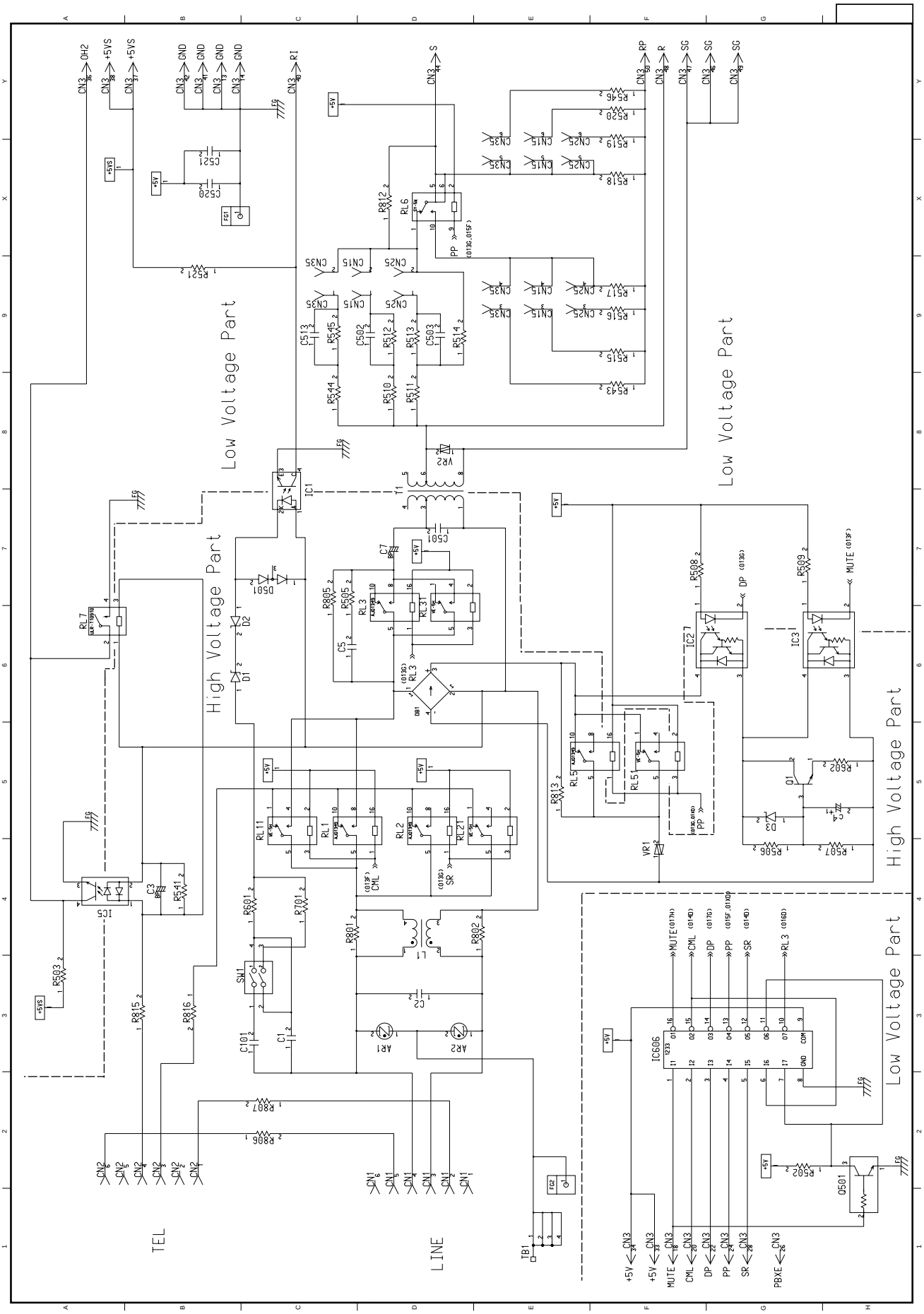
04W-PCB Circuit Diagram (2/2)
(40071401SS)



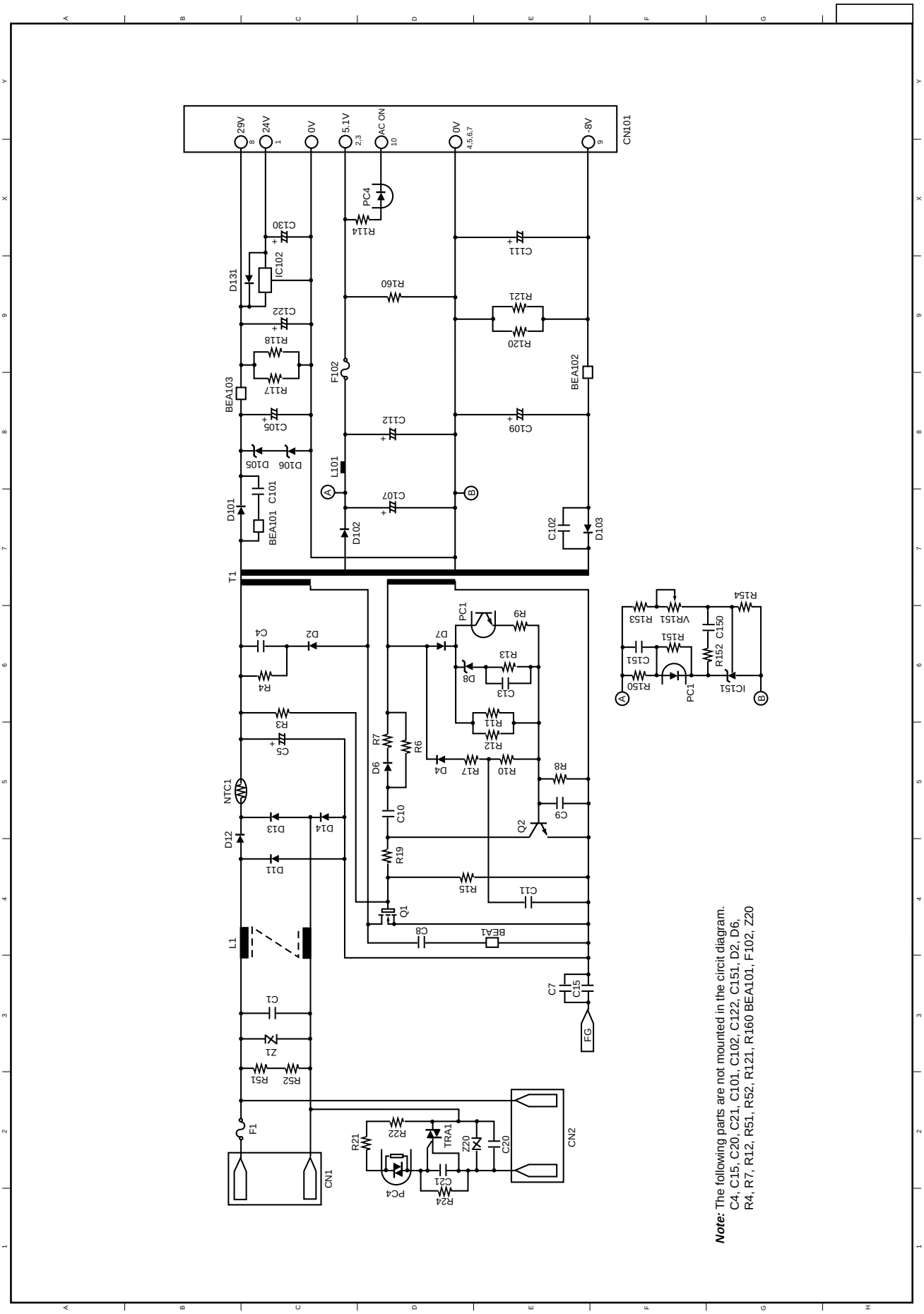
EN9-PCB Circuit Diagram (1/2)
(41144301SS)



EN9-PCB Circuit Diagram (2/2)
(41144301SS)

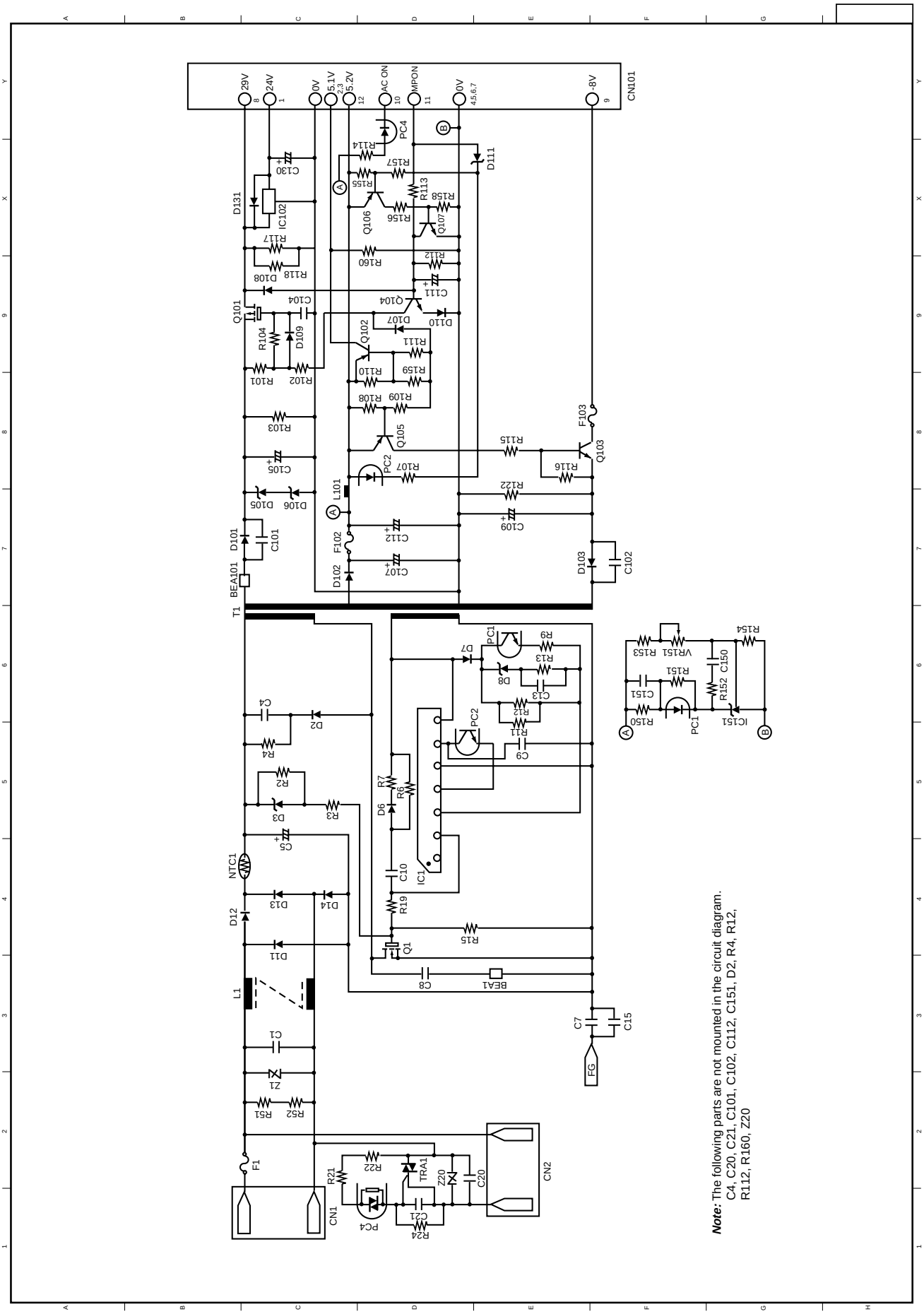


INU-PCB Circuit Diagram (1/1)
(41144501SS)

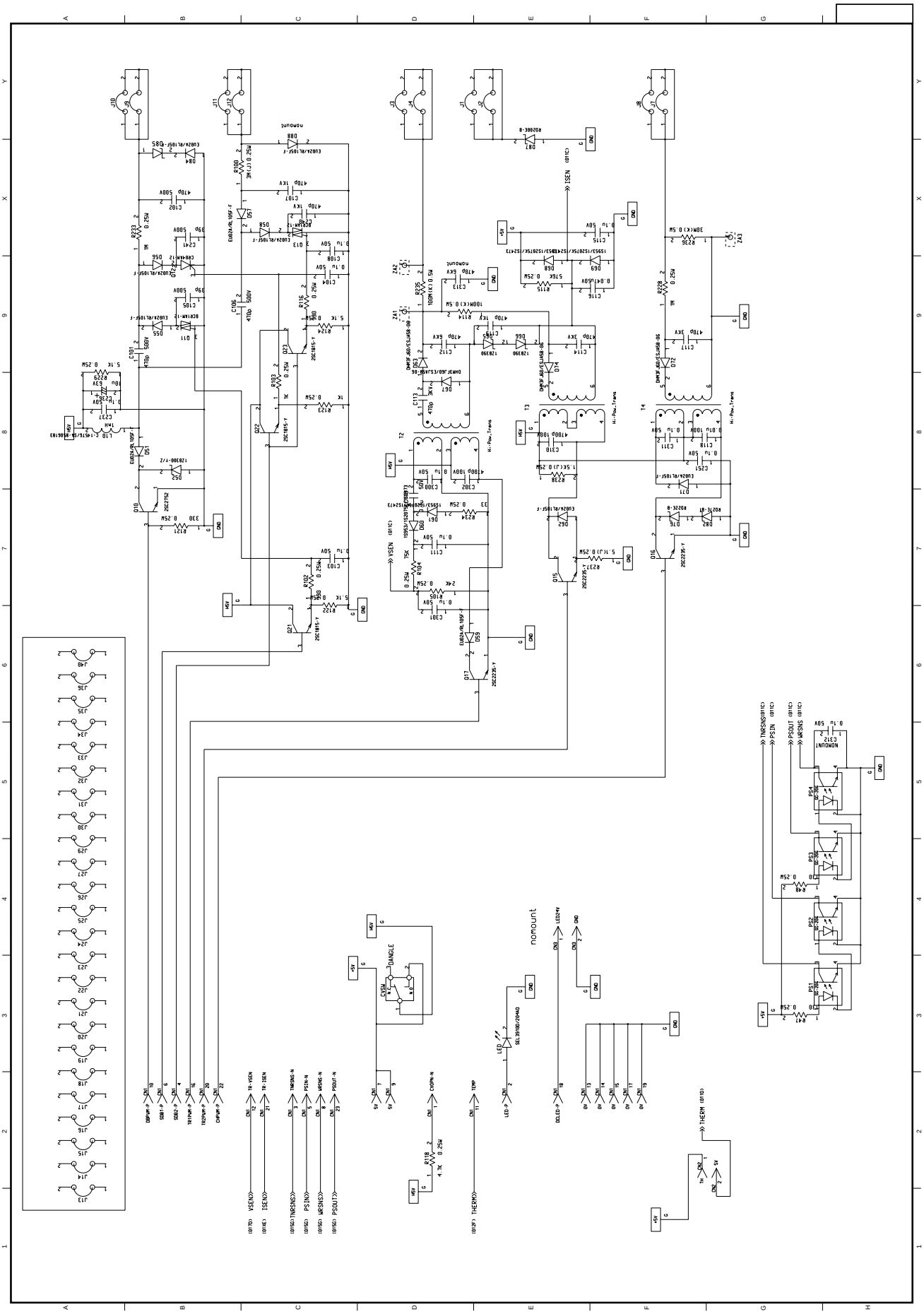


Note: The following parts are not mounted in the circit diagram.
C4, C15, C20, C21, C101, C102, C122, C151, D2, D6,
R4, R7, R12, R51, R52, R121, R160 BEA101, F102, Z20

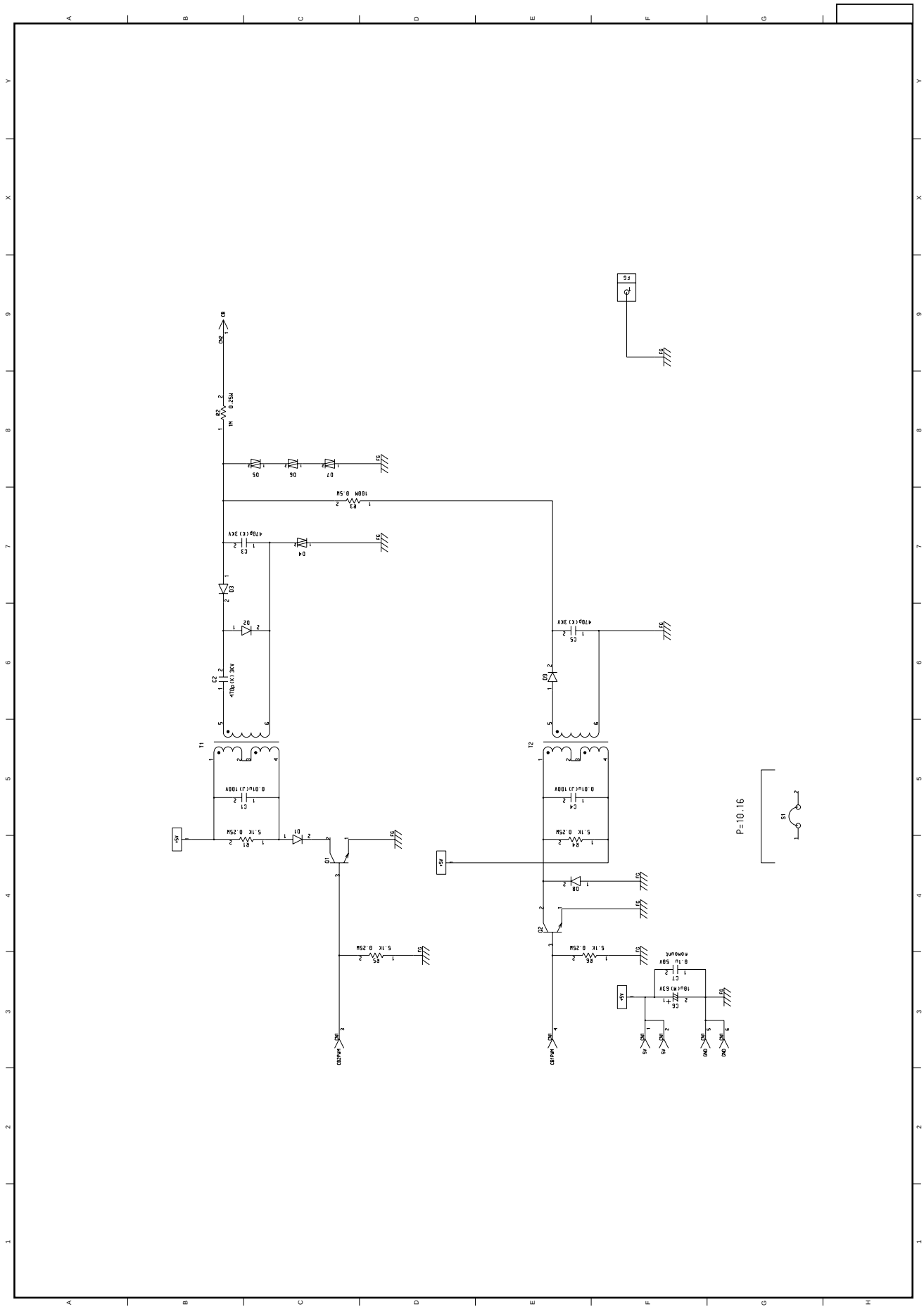
POW (120VAC) Circuit Diagram (1/1)
(MPW1546)



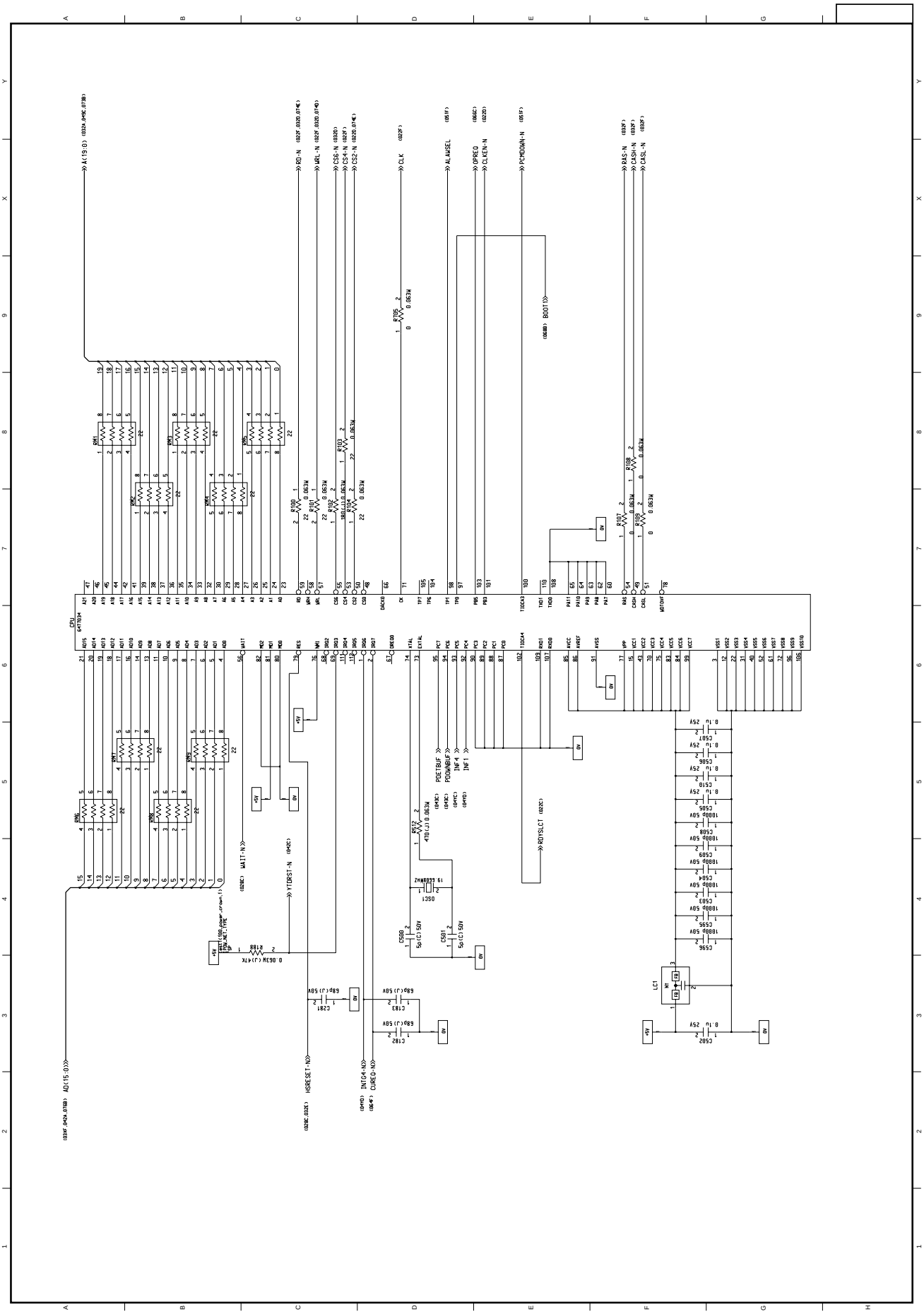
POW (230VAC) Circuit Diagram (1/1)
(MPW1446)



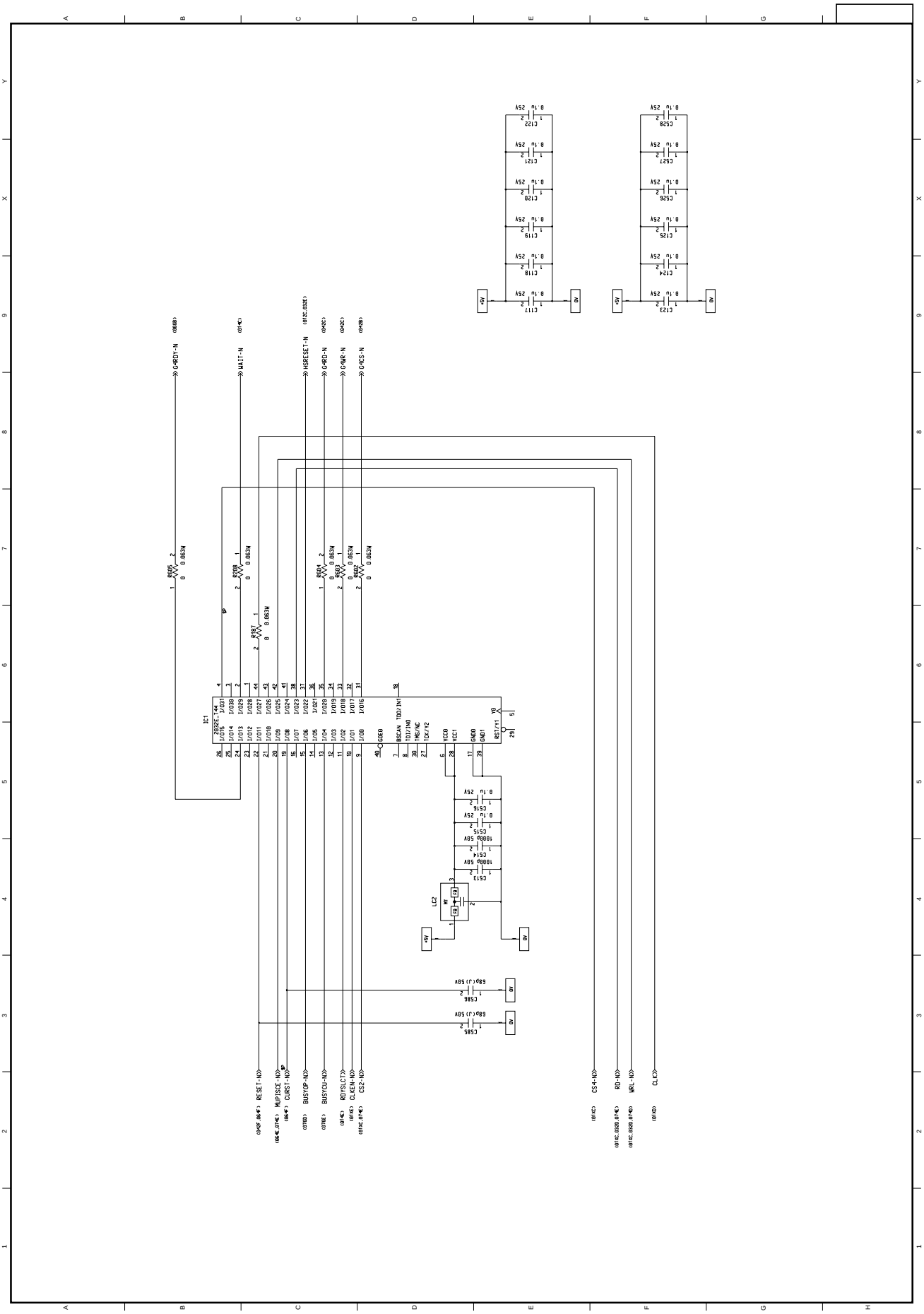
P2H-PCB Circuit Diagram (1/1)
(40599101SS)



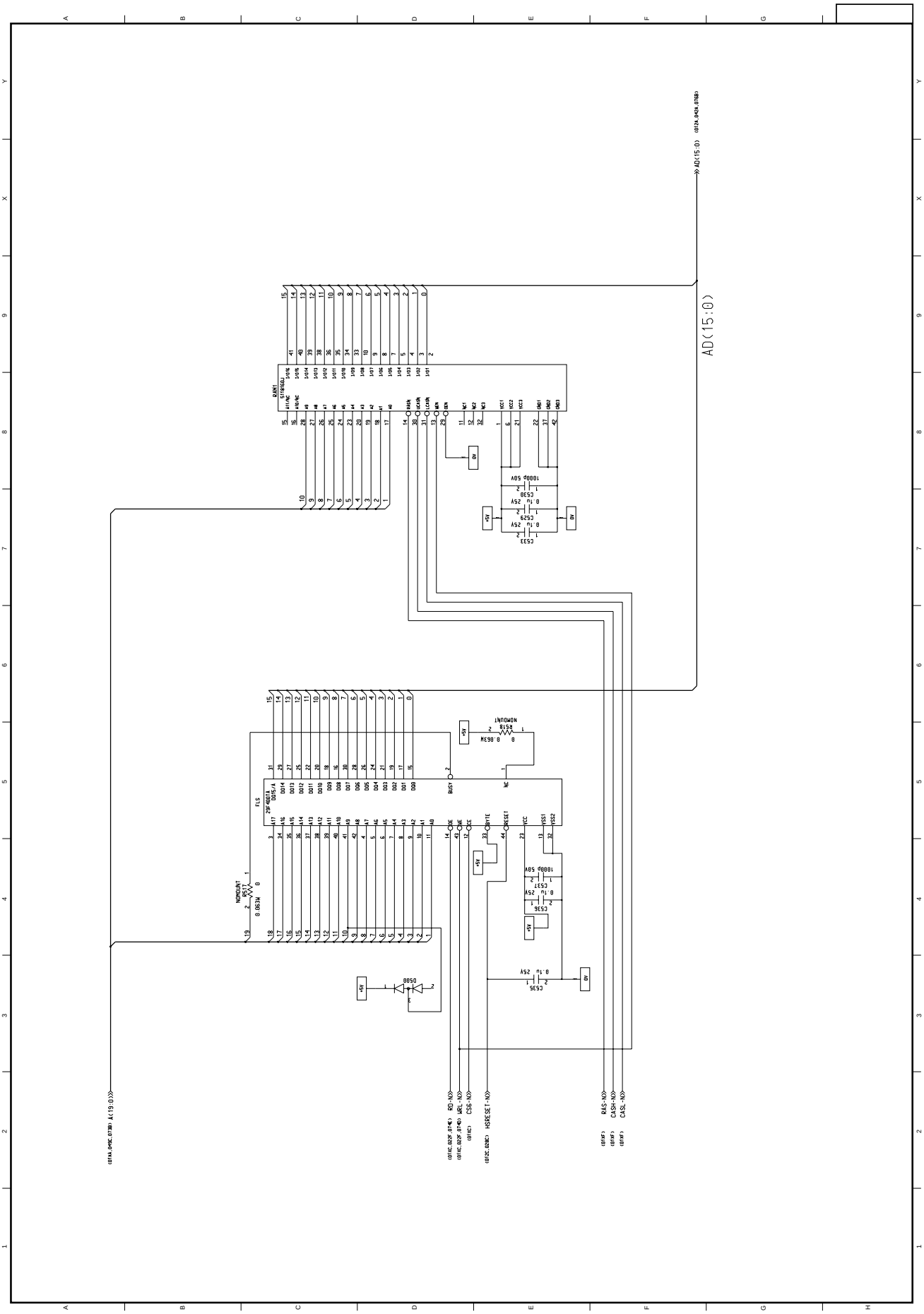
P6L-PCB Circuit Diagram (1/1)
(40386701SS)



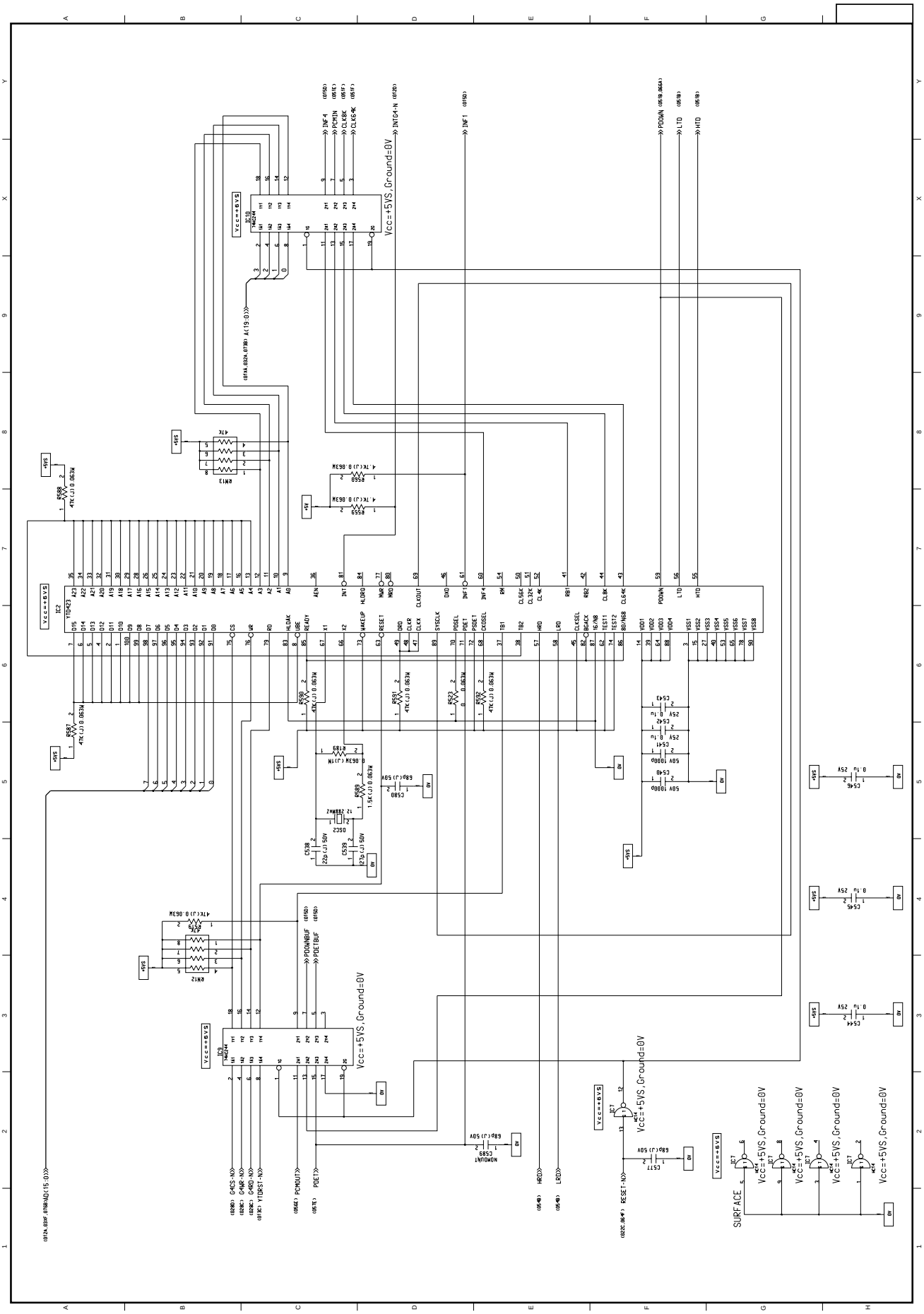
G4N-PCB Circuit Diagram (1/7)
(41033701SS)



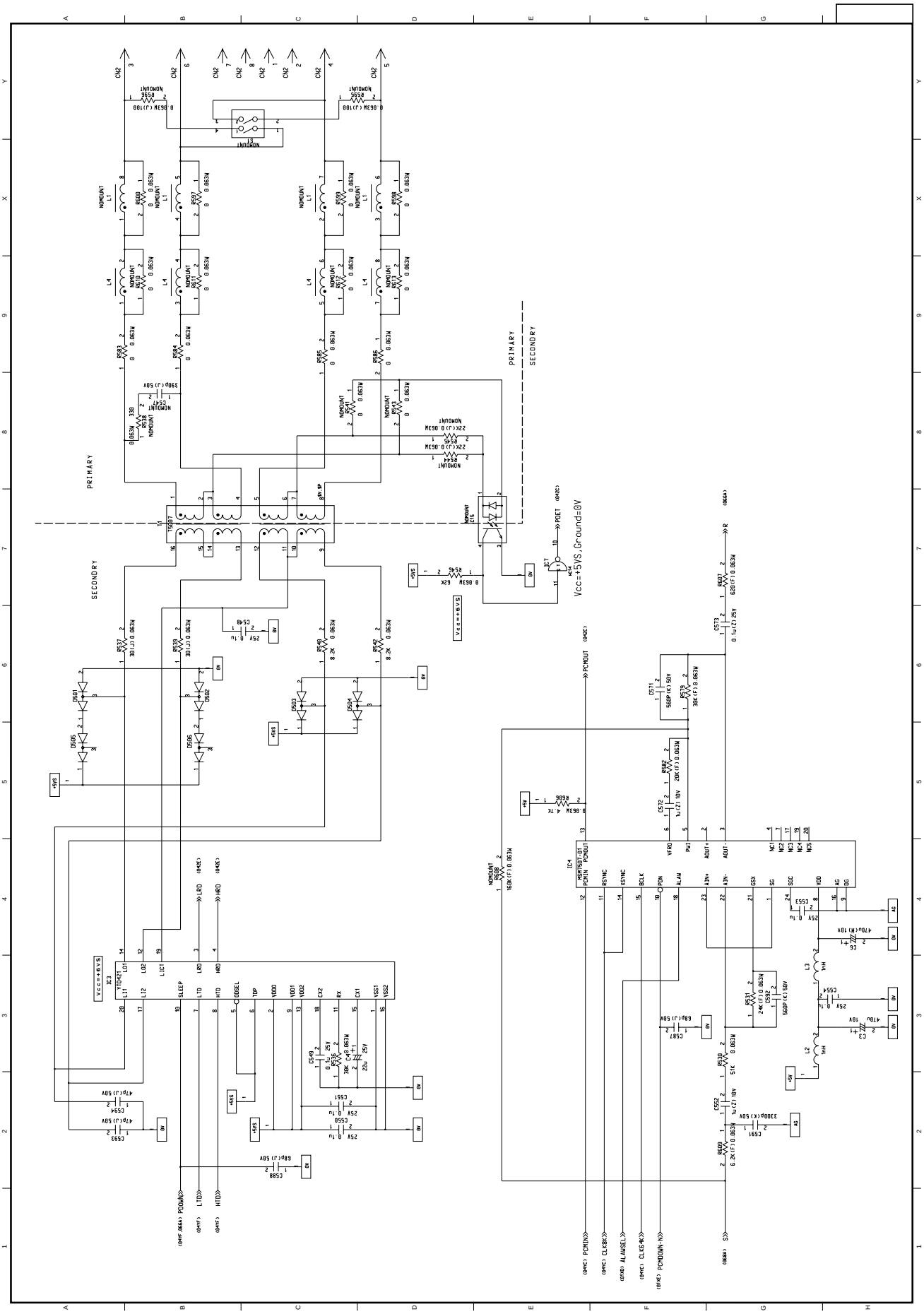
G4N-PCB Circuit Diagram (2/7)
(41033701SS)



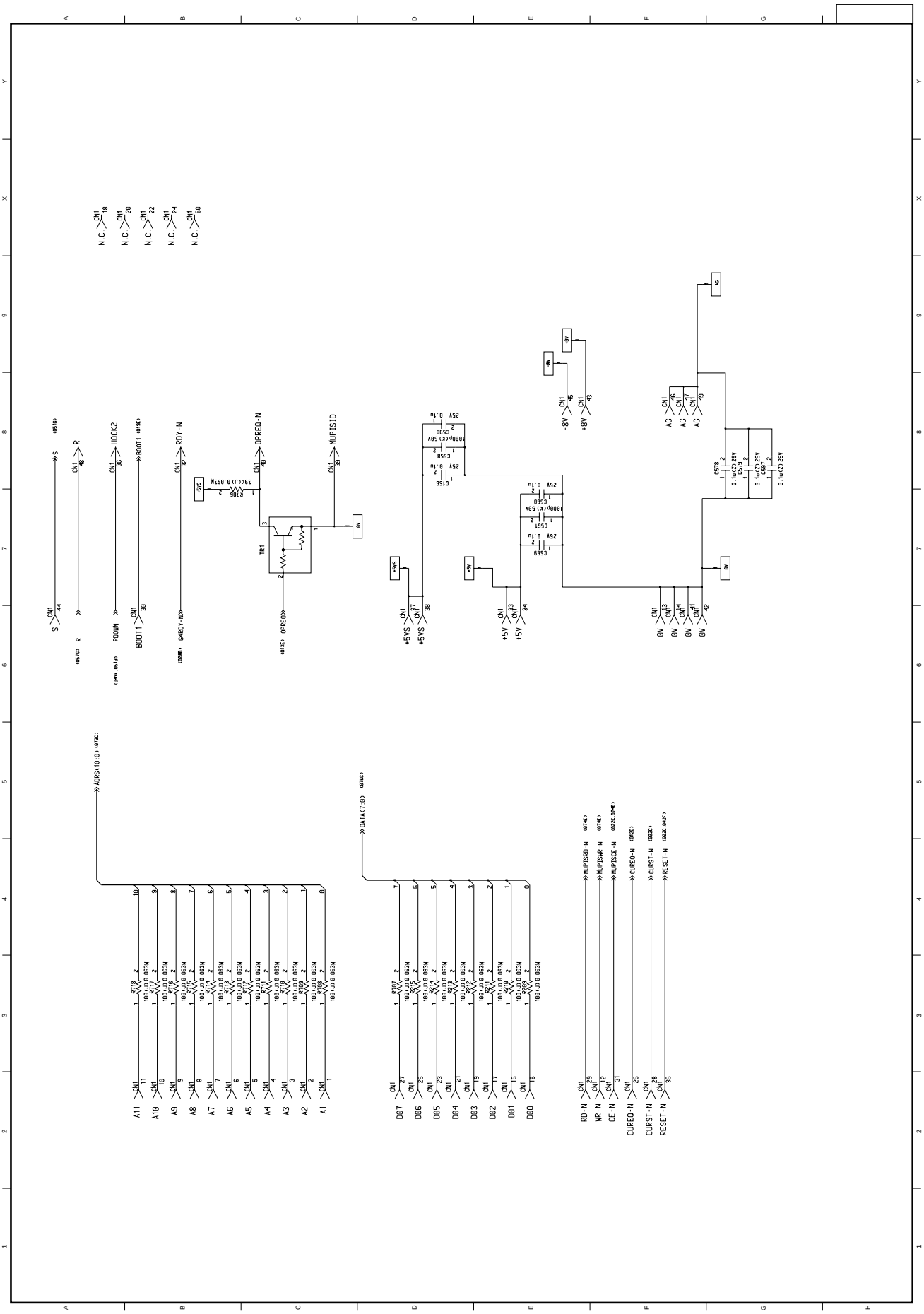
G4N-PCB Circuit Diagram (3/7)
(41033701SS)



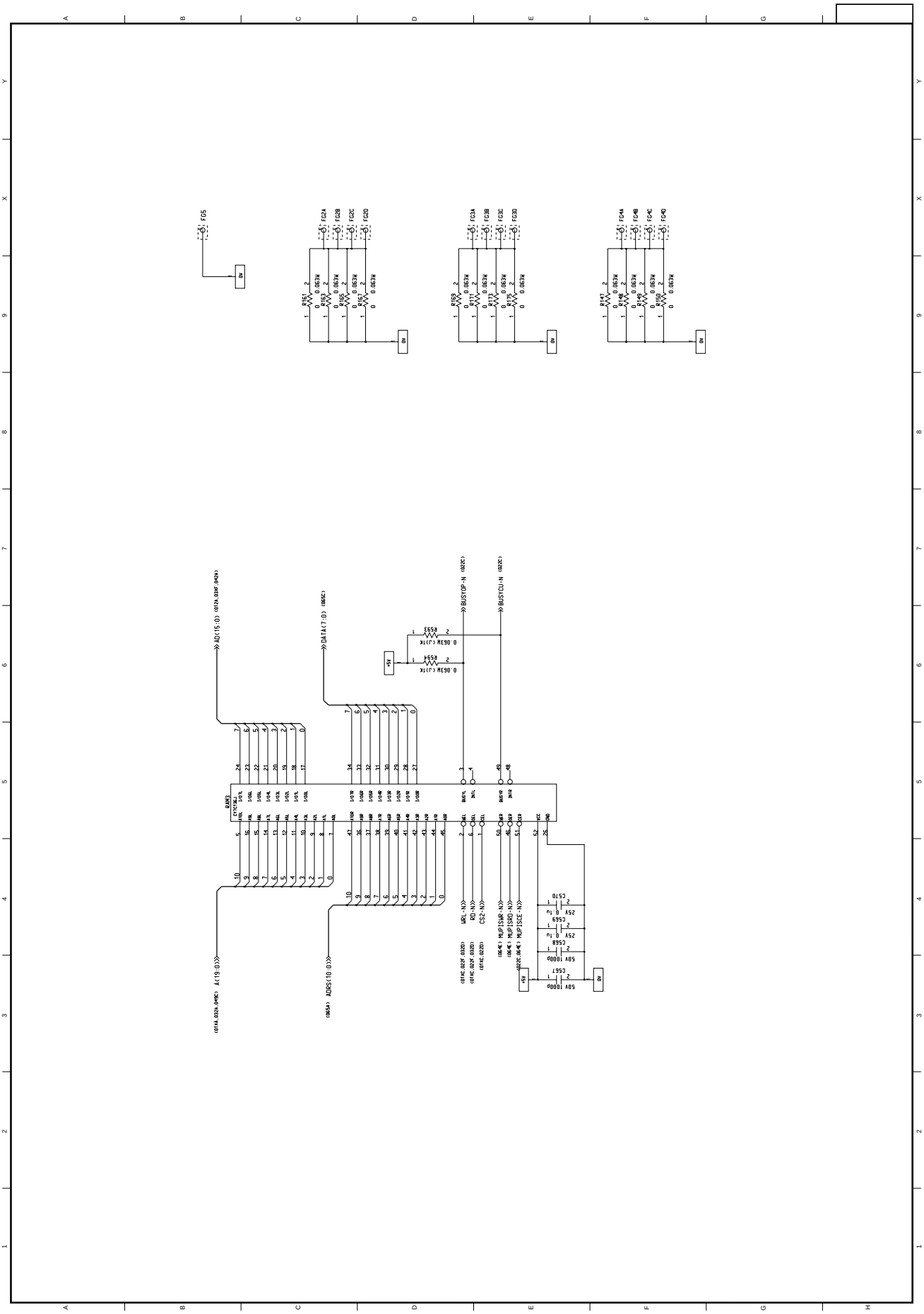
G4N-PCB Circuit Diagram (4/7)
(41033701SS)



G4N-PCB Circuit Diagram (5/7)
(41033701SS)



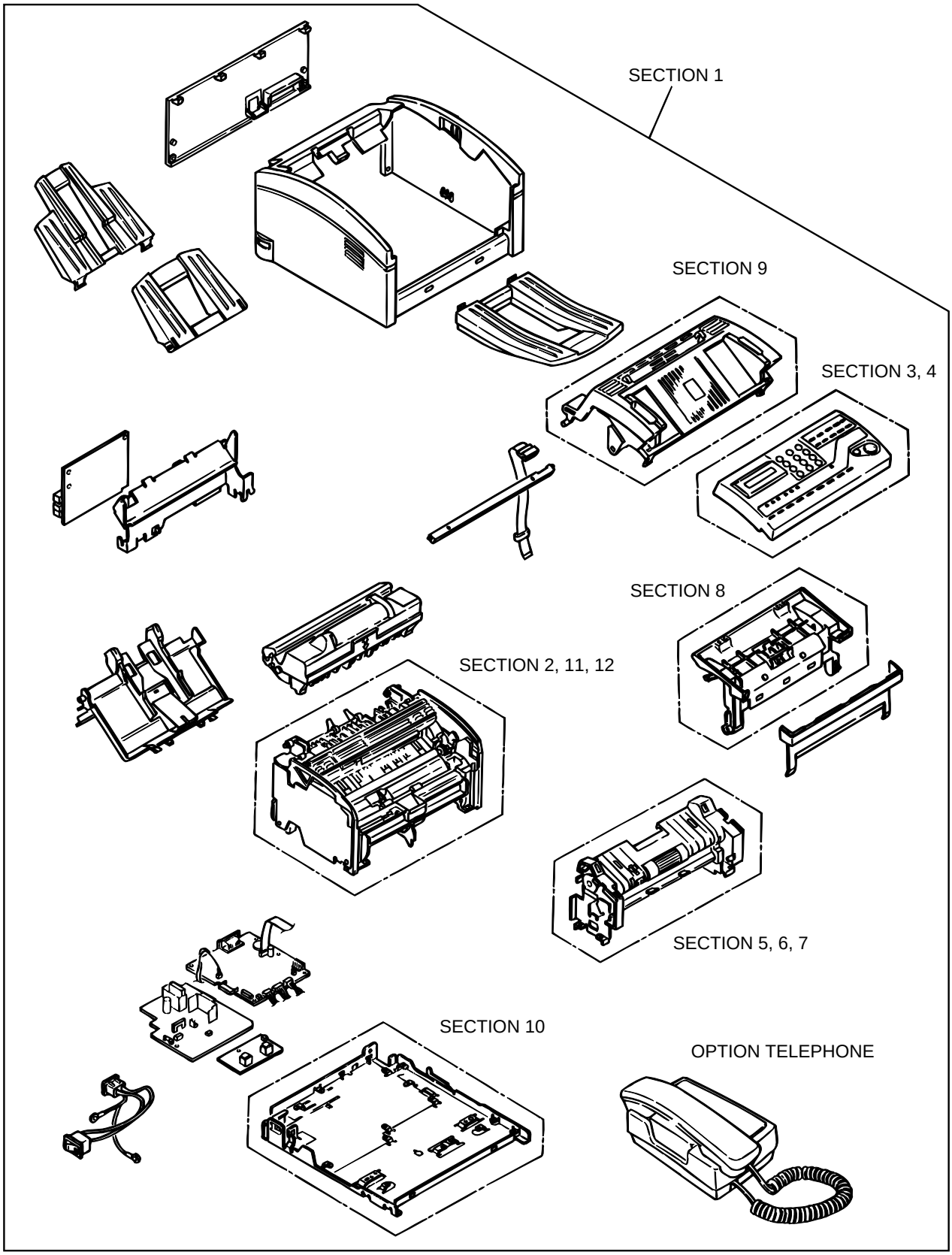
G4N-PCB Circuit Diagram (6/7)
(41033701SS)



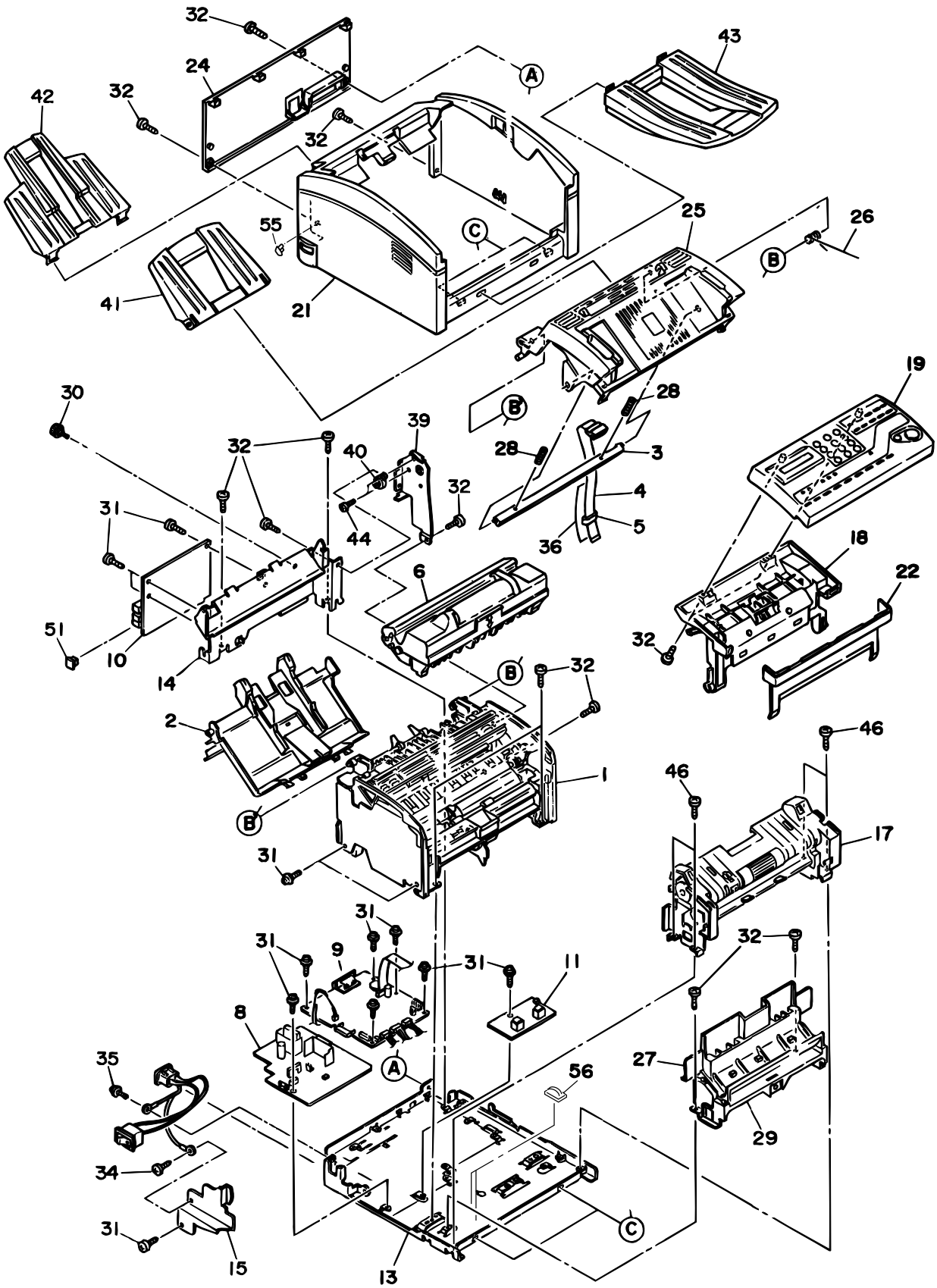
G4N-PCB Circuit Diagram (7/7)
(41033701SS)

APPENDIX D MECHANICAL EXPANDED VIEW DRAWING AND PARTS LIST

OKIFAX4550/OKIOFFICE87 ASSEMBLY



SECTION 1 CABINET ASSEMBLY (OKIFAX4550/OKIOFFICE87)



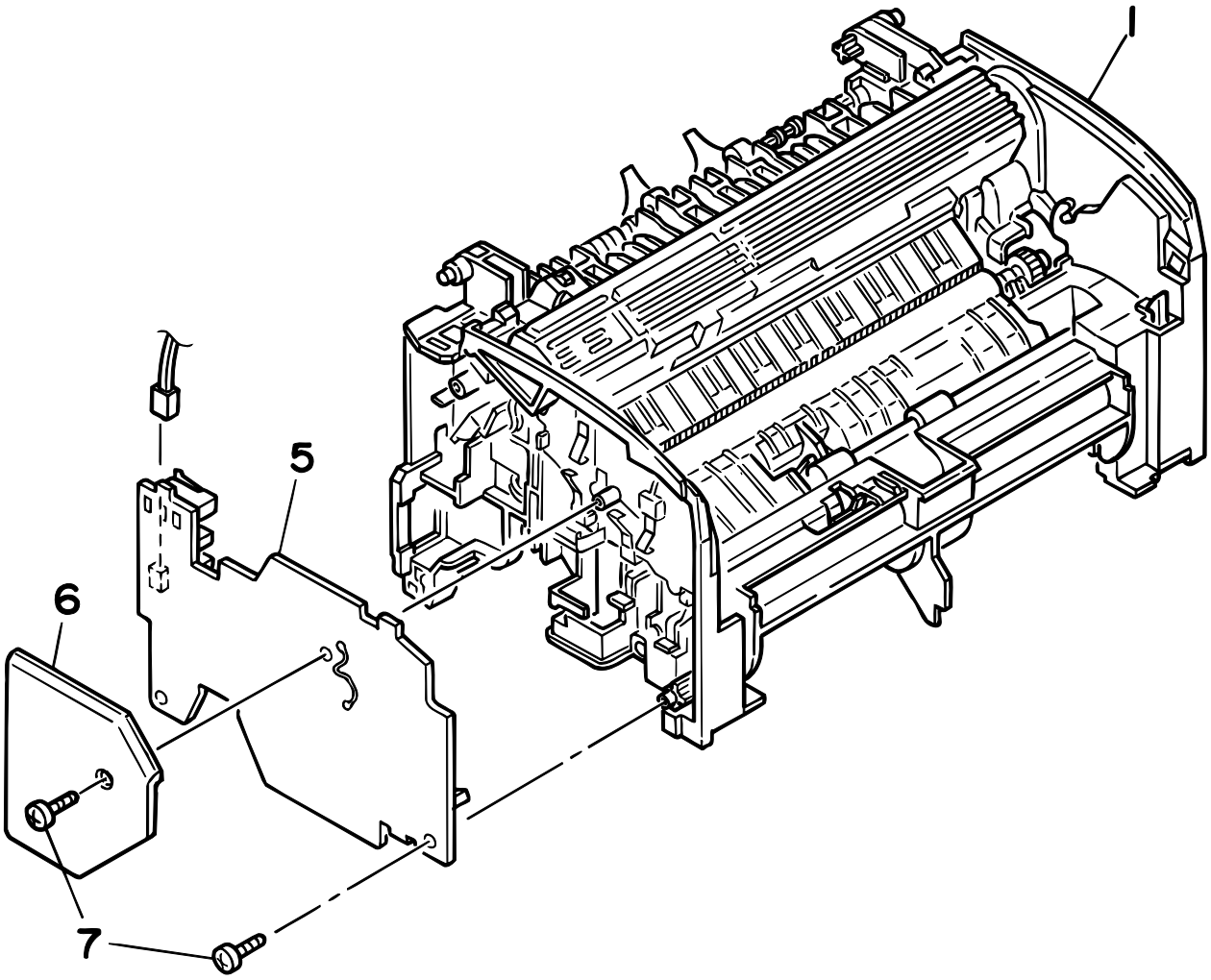
Section 1 CABINET ASSEMBLY (OKIFAX4550/OKIOFFICE87) 1/2

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1		Unit-Printer		Refer to Section 11
	2		HOLDER-ASSY		Refer to Section 11
3	3a	4YA4116-1228G001	LED HEAD General specification-31B	1	OKIFAX4550
3	3b	40521101	LED HEAD Unit-51J	1	OKIOFFICE87
4	4a	41016104	Cable-Flat-Assy	1	For OKIFAX4550 THAI production
5	~~4a~~	~~4YX4083-1134G001~~	~~CABLE FLAT ASSY.~~	~~1~~	~~OKIFAX4550~~
3	4b	41686801	Card-LED_Assy.	1	OKIOFFICE87
	5				Refer to Section 13
	6		EP Unit Specification	1	Consumable
	7				
3	8a	40588801	DC POWER SUPPLY UNIT (120V)	1	
3	8b	40588901	DC POWER SUPPLY UNIT (230V)	1	
4	9a	41821601	Board-46F-2 Spare parts kit	1	For OKIFAX4550 *3 UK production
5	~~9a~~	~~41255801~~	~~Board-46F~~	~~1~~	~~OKIFAX4550~~
3	9b	41345201	Board-R46	1	OKIOFFICE87
4	9c	41255802	Board-46F-2	1	For OKIFAX4550 THAI production
	10a	41143501	Board-EN9	1	OEL (Europe)
	10b	41143902	Board-INU	1	INT (Australia)
	10c	41172901	Board-G4N	1	ISDN
3	10d	41143901	Board-INU	1	ODA(USA)
4	10e	41143904	Board-INU	1	INT(Singapore)
4	10f	41143905	Board-INU	1	NO-EC(East Europe)
	11	40605601	H.V. Board P6L	1	
	12				
	13	40672901	Plate Assy.-Base (A)	1	
	14	40023901	Bracket-Package	1	
	15	40236401	Plate Assy. - Shield (HV)	1	
	16				
5	17	41767002	Frame Assy.-Scanner L	1	300dpi
5	18a	41766703	Frame Assy.-Scanner (U)	1	OKIFAX4550
5	18b	41766704	Frame Assy.-Scanner (U)	1	OKIOFFICE87
	19		OPE Panel Assy.	1	Refer to Section 3, 4
	20				
3	21	40606501	Cover-Main (A)	1	
3	22	40025301	Cover-Front	1	
	23				
3	24	40606601	Cover-Rear (A)	1	
3	25	40672801	Cover Assy.-Top (A)	1	
	26	40026101	Spring-TC	1	
	27	40024001	Guide-Paper (U)	1	
	28	4PP4083-6168P001	HEAD Spring	2	
	29	40024101	Guide-Paper (L)	1	
	30				
	31		B Tapping Screw		
	32		B Tapping Screw FA		
	33		B Screw B		
	34		Screw		

Section 1 CABINET ASSEMBLY (OKIFAX4550/OKIOFFICE87) 2/2

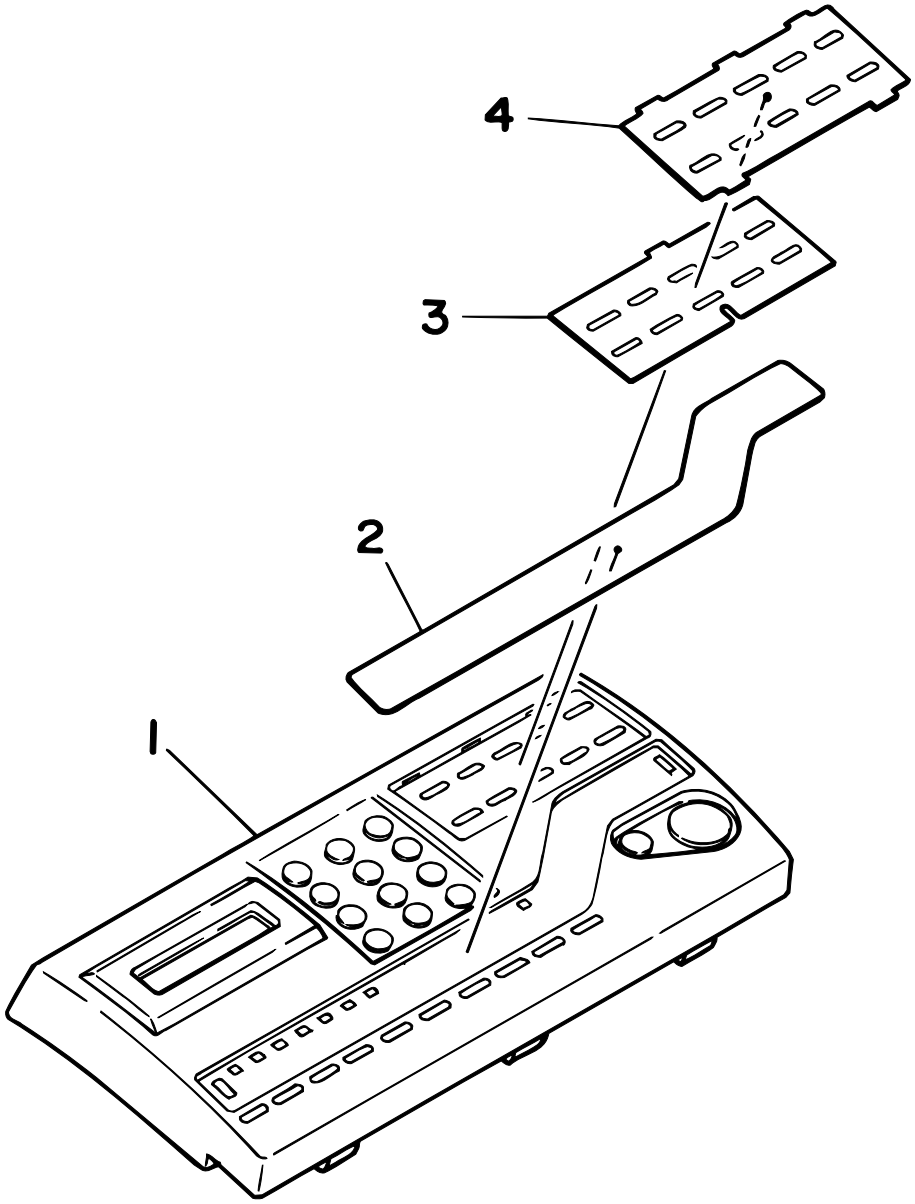
Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	35		Screw	1	
3	36	40773601	Sheet-Shield (LED)	1	OKIFAX4550
	37				
	38				
	39	40140801	Bracket-Damper	1	
	40	40148201	Gear-Damper	1	
3	41	40025701	Tray-Document	1	
3	42	40025801	Tray-Paper	1	
3	43	40375801	Stacker Assy.-Document	1	
	44		Screw-Tapping (S-M2)		
	45				
	46		Cup Screw B		
	47				
	48				
	49				
3	50	NB3201-1211P001	CARRIER SHEET	1	GER, TENOVIS
3	51	223A7010P0003	TM-6-DC1 Connector-Plug	1	GER, TENOVIS
	52				
	53				
	54				
	55	41345101	Cap-TEL_IF	1	
3	56	41725701	Clamp-Cable	2	OKIOFFICE87

**** 3:*** This spare parts kit includes Item No.4a : 41016104 Cable-Flat_Assy. and Item No.9c : 41255802 Board-46F-2.


1
5
6
7

Section 2 UNIT-PRINTER

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1		Printer Unit Assembly		See Section 11
	2				
	3				
	4				
	5	40607401	H.V. Board P2H	1	
	6	40413401	Cover-HV	1	
	7		Screw F		


4
3
2
1

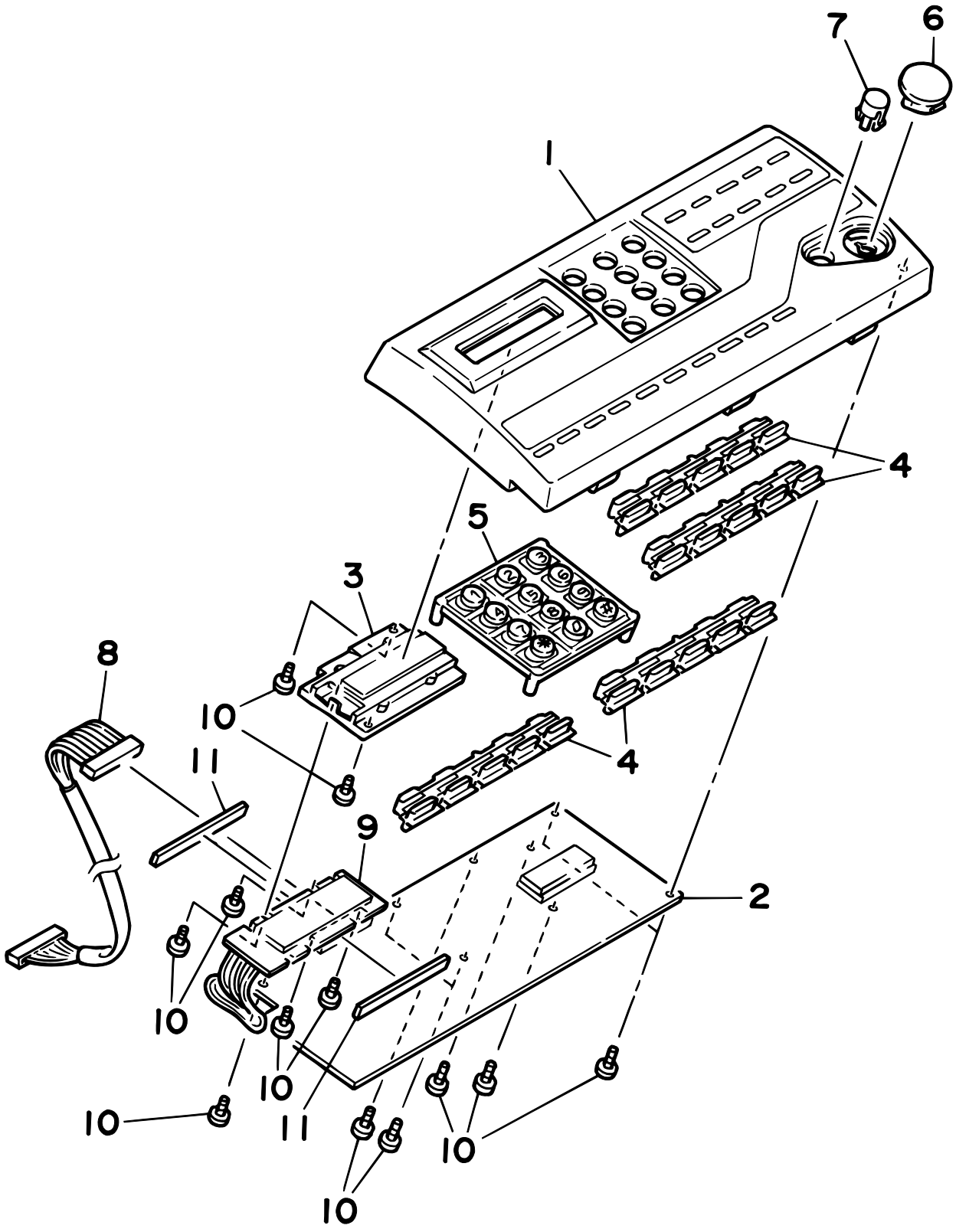
Section 3 UNIT-051 OPE PANEL

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
4	1	41766901	OP Panel Assy.	1	ODA/OEL/INT/TENOVIS *4
4	~~1a~~	~~00032101~~	~~OP Panel Assy.~~	~~1~~	~~OKI-INT/OEL~~ *5
4	1b	41766904	OP Panel Assy.	1	LANIER *4
4	~~1b~~	~~00032103~~	~~OP Panel Assy.~~	~~1~~	~~LANIER~~ *5
4	~~1c~~	~~00032104~~	~~OP Panel Assy.~~	~~1~~	~~BOSCH~~ *5
4	2a	40682804	Sheet-Function	1	OKIFAX4550 OEL/INT
4	~~2a~~	~~01006913~~	~~Sheet-F-046~~	~~1~~	~~OEL-INT/OKI-INT~~ *5
4	2b	01006911	Sheet-F-046	1	OKIFAX4550 GER
4	2c	01017809	Sheet-F-046-ISDN	1	OKIFAX4550ISDN OEL/INT
4	2d	01017811	Sheet-F-046-ISDN	1	OKIFAX4550ISDN GER
4	2e	40682808	Sheet-Function	1	OKIOFFICE87 ODA/OEL/INT
4	~~2e~~	~~01034606~~	~~Sheet-F-87~~	~~1~~	~~OKIOFFICE87 ODA/OEL/INT~~ *5
4	2f	01034609	Sheet-F-87	1	OKIOFFICE87 GER
4	2g	01006923	Sheet-F-046	1	TENOVIS
4	3a	41254701	Sheet-O-051_2net	1	ODA/OEL/INT
4	~~3a~~	~~01012709~~	~~Film-OP panel~~	~~1~~	~~OEL-INT/OKI-INT~~ *5
3	3b	01012704	Film-OP panel	1	German
	4	40023601	Sheet-Cover	1	

4: The parts include Item No.§ 13-2 : 40040001 Connection Cord-Wire(OPE).

5: If there are the parts stock, they can be used as spare parts.
Do not order with these parts number.

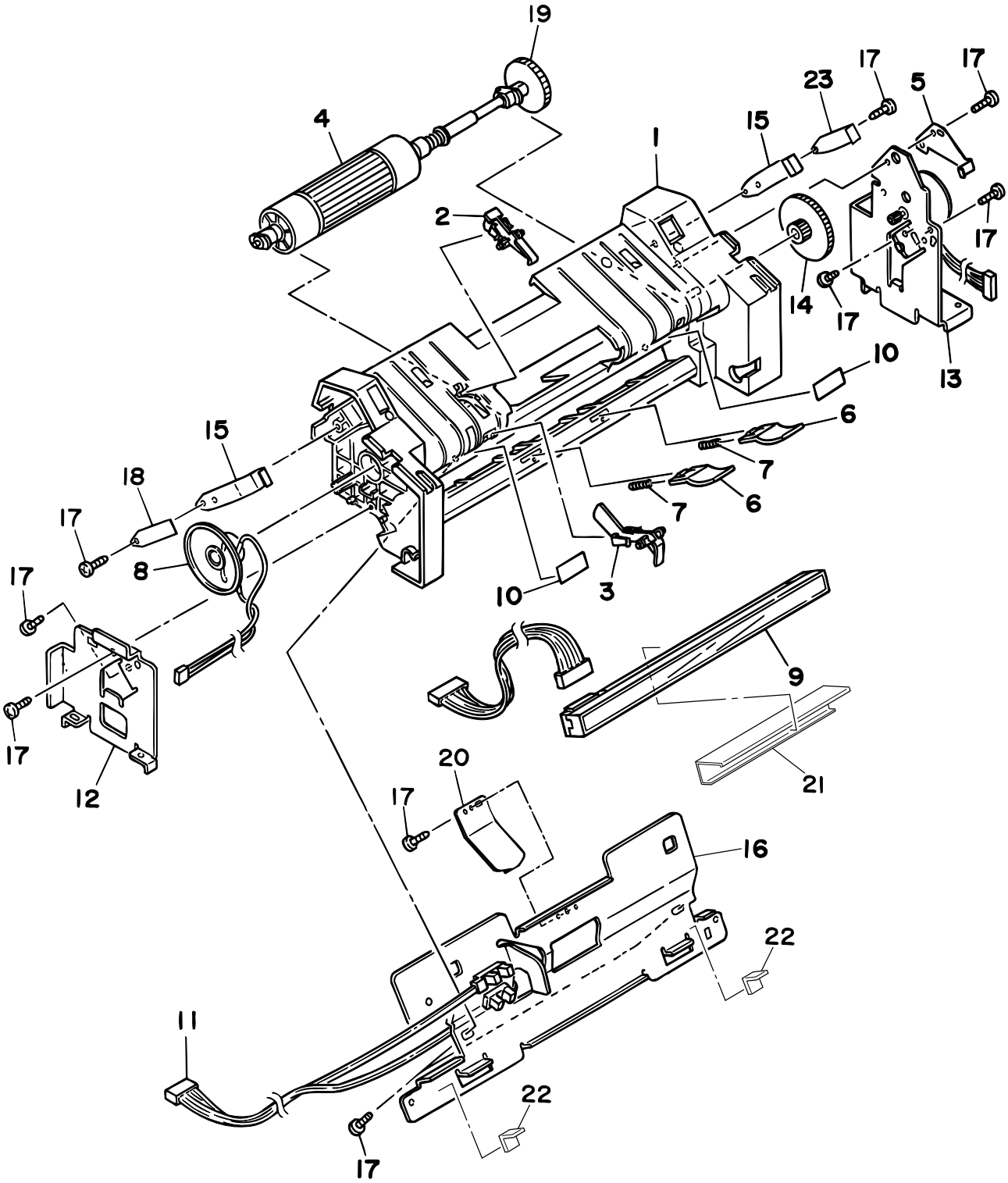
SECTION 4 OPEPANEL (OPERATION PANEL) ASSEMBLY



Section 4 OPE PANEL ASSEMBLY

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1		Case-OPE(T)	1	OKI, LANIER
	2	40086701	Board-04W	1	
	3	40023001	Holder-LCD	1	
	4	40023101	Button-Function	4	
	5	2PP4120-1067P001	Ten Key (Round)	1	
3	6a	40023201	Button-Start	1	OKI, TENOVIS
	6b	40023202	Button-Start	1	LANIER
3	7a	40023301	Button-Stop	1	OKI, TENOVIS
	7b	40023302	Button-Stop	1	LANIER
	9	4YB4134-1009P001	LCD	1	
	10		B SCREW A		
	11	4PB4120-1113P001	Rubber Connector	2	

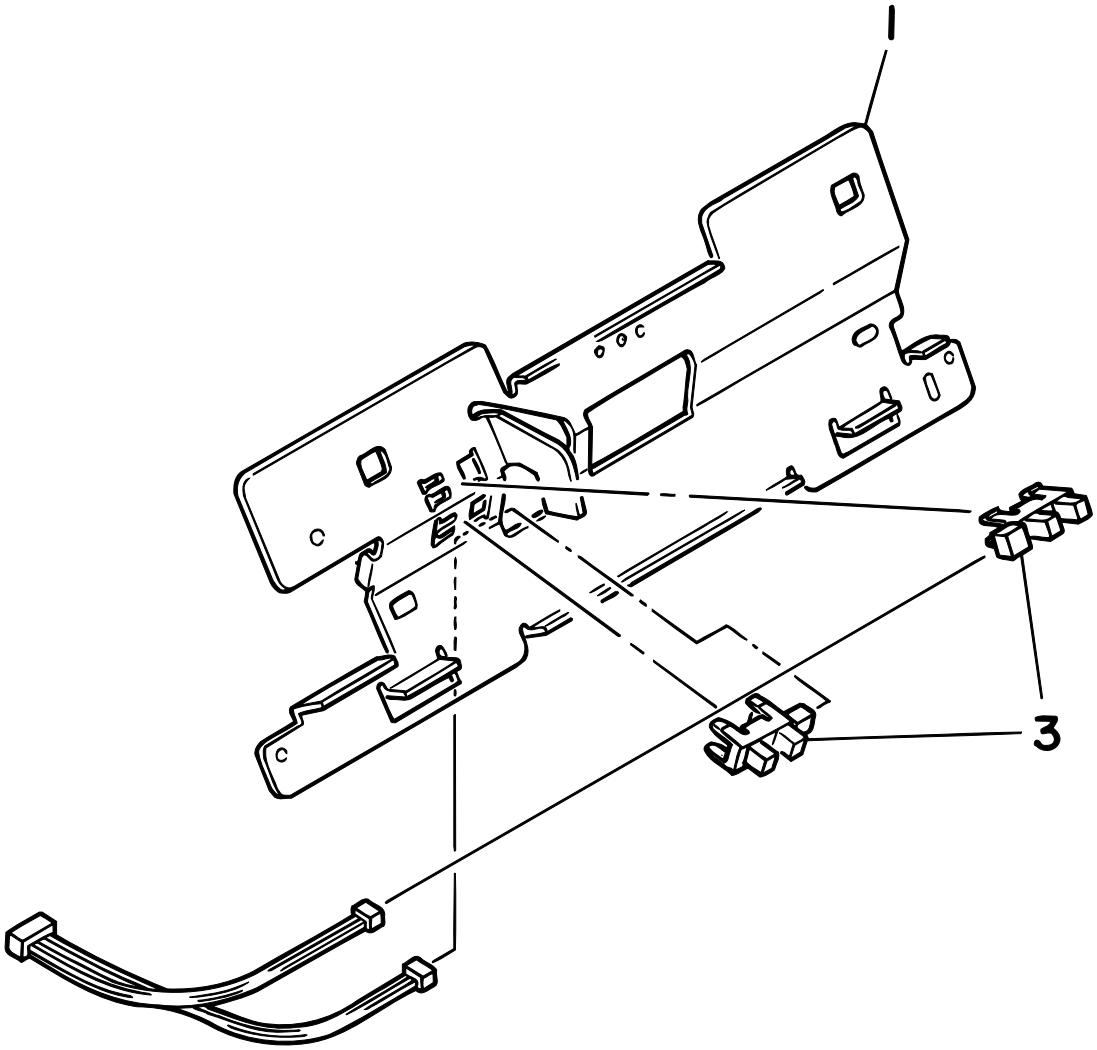
SECTION 5 FRAME ASSEMBLY-SCANNER (L)



Section 5 FRAME ASSEMBLY-SCANNER L

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1		Frame-Scanner (L)		
	2	40019401	Lever-PC1	1	
	3	40019501	Lever-PC2	1	
	4	40019601	Roller Assy.-ADF	1	
	5	40020201	Plate-Earth ADF	1	
	6	40020601	Piece-Exit	2	
	7	40020703	Spring-Exit	2	
	8	40127501	CONN Cord-Speaker	1	
	9	40141401	CONTACT IMAGE SENSOR-A4	1	300dpi
	10	40644701	Film-Guide (CIS)	2	
	11				Refer to Section 13
	12		Plate-Scanner (L)	1	
	13		Plate Assy.-Scanner (R)	1	
	14	40020301	Gear-Z95/14	1	
	15	40020501	Spring-Latch	2	
	16		Plate Assy.-Scanner (B)	1	
	17		B Screw FA		
5	18	40153801	Spring-Reinforcement	1	
	19	40025201	Gear-Z38	1	
	20	40024501	Spring-CIS	1	
2	21	41667901	Plate-Earth_CIS	1	
3	22	41734401	Foam-Shielding	2	
5	23	40899901	Spring-Reinforcement_Add_Work	1	

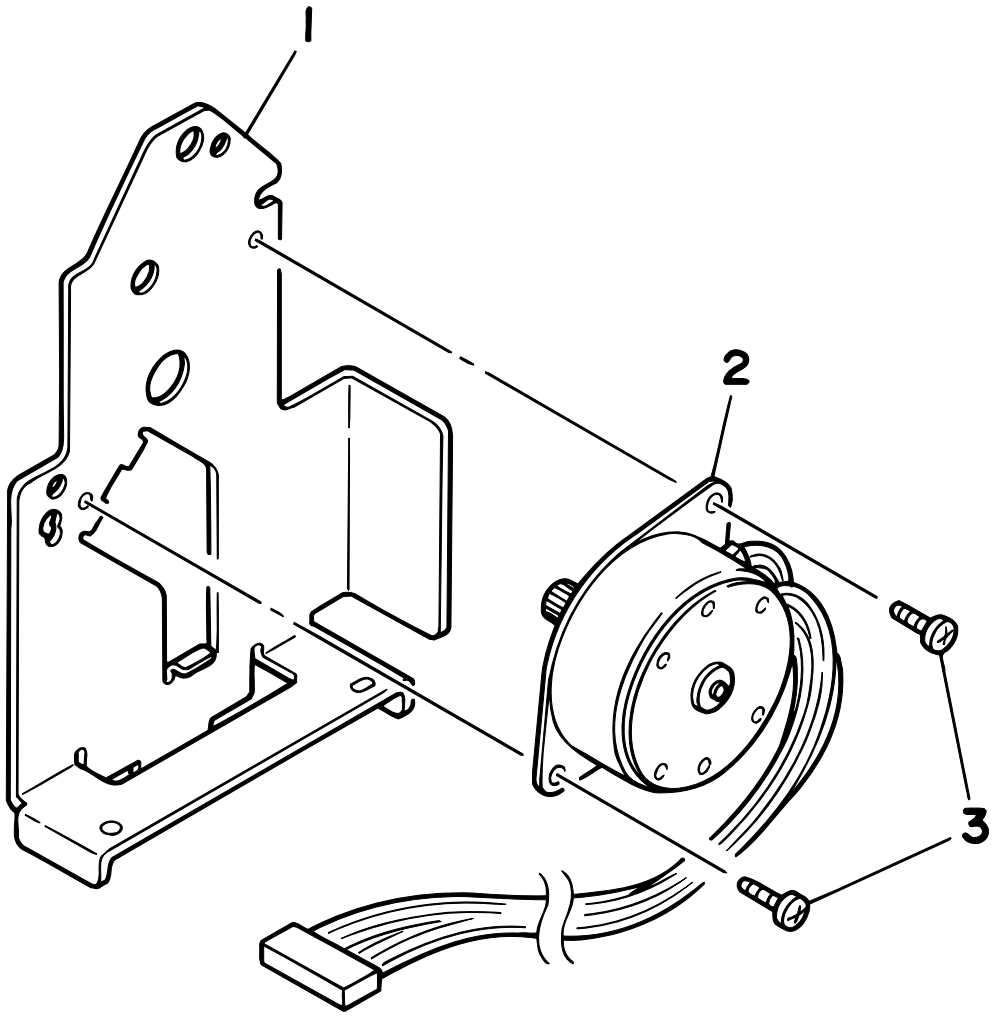
SECTION 6 PLATE ASSEMBLY-SCANNER (B)



Section 6 PLATE ASSEMBLY-SCANNER (B)

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1		Plate-Scanner (B)		
	2				
	3	40135301	Photo-Interrupter	2	

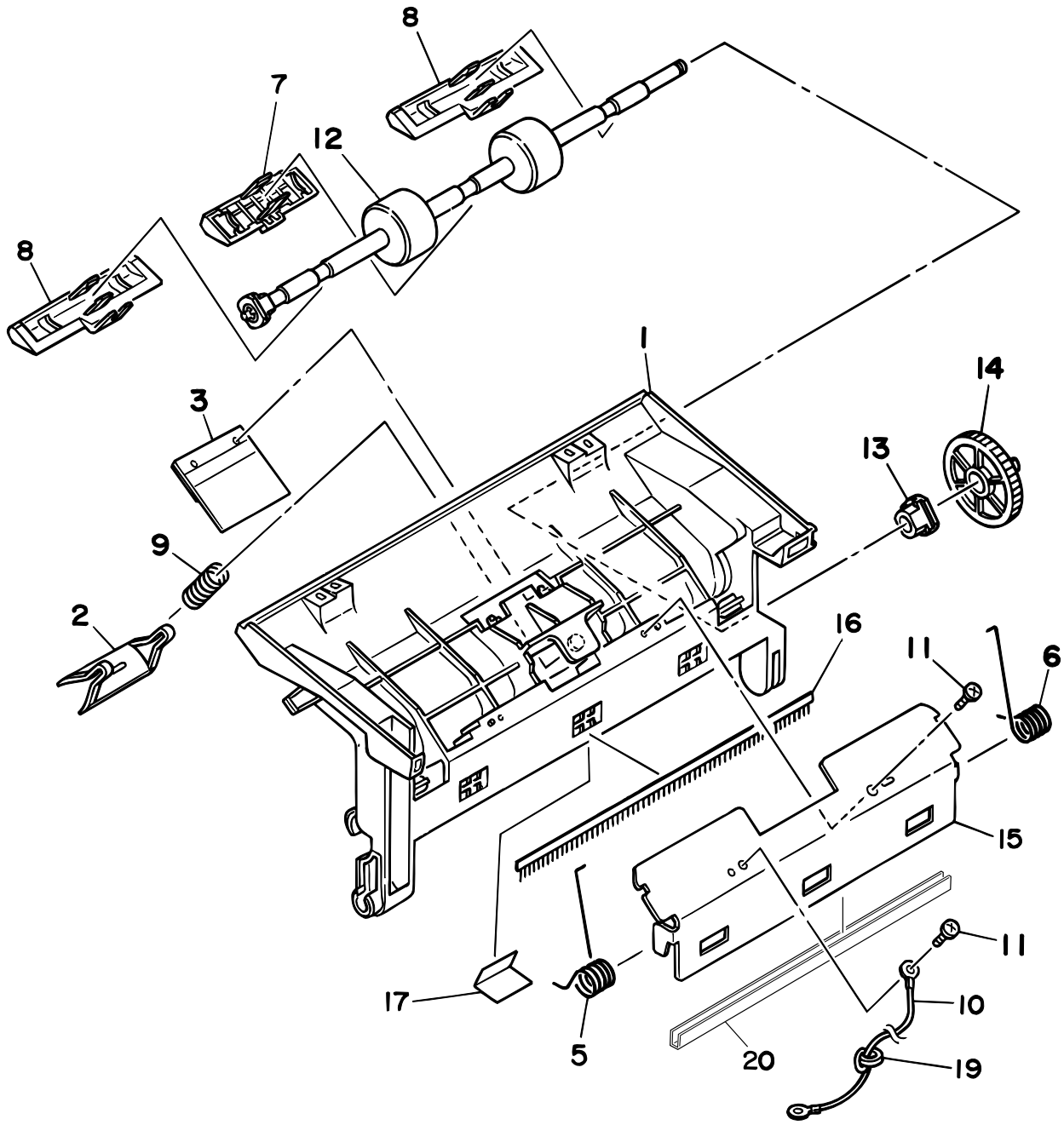
SECTION 7 PLATE ASSEMBLY-SCANNER (R)



Section 7 PLATE ASSEMBLY-SCANNER (R)

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1		Plate-Scanner (R)	1	
	2	4YB4120-1036P001	S-Motor 151/175	1	
	3		B SCREW FA		

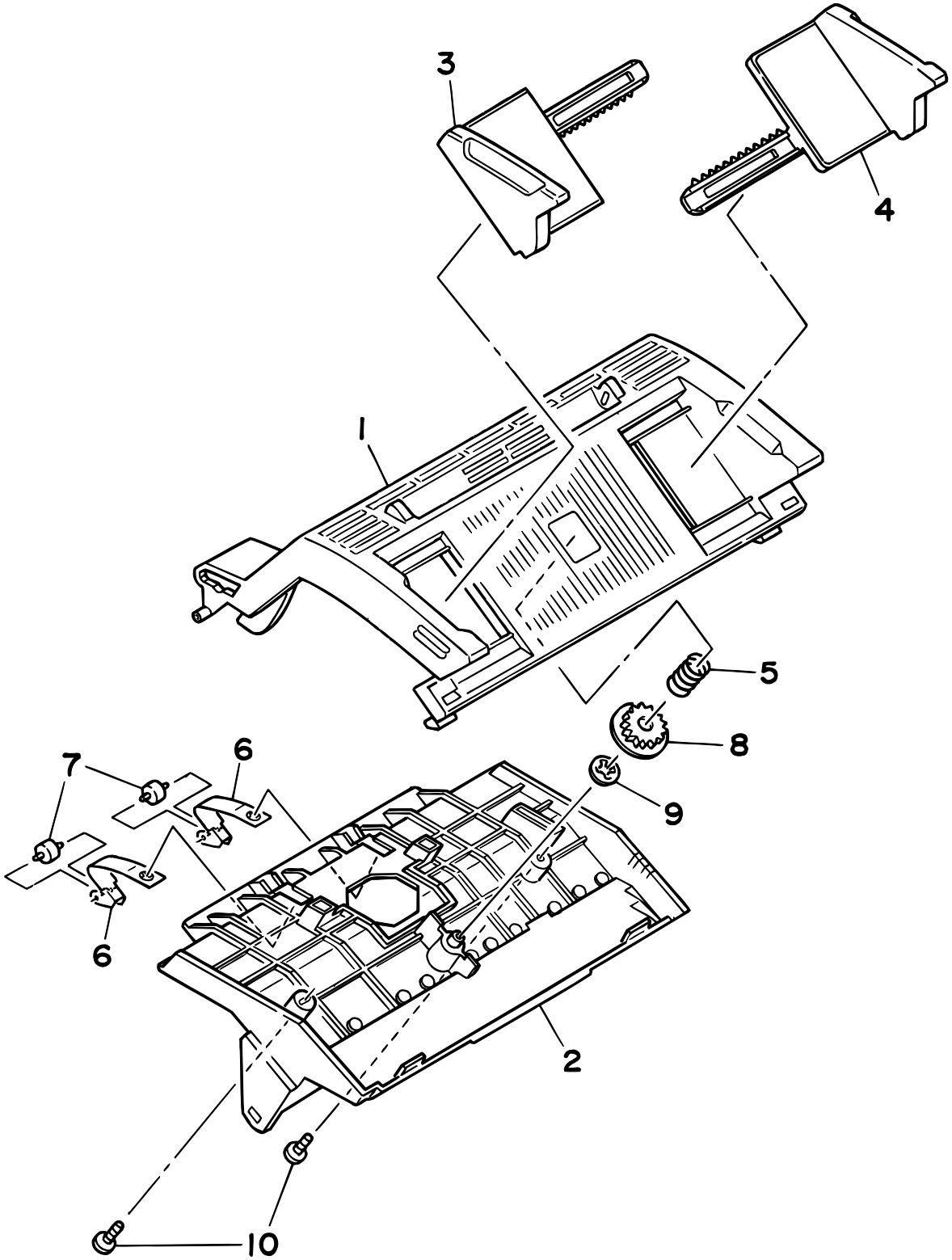
SECTION 8 FRAME ASSEMBLY-SCANNER (U)



Section 8 FRAME ASSEMBLY-SCANNER (U)

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1		Frame-Scanner (U)	1	
	2	4PP3527-5153P001	BACK-UP PLATE	1	
	3	40267001	SEPARATION RUBBER ASSEMBLY	1	
	5	40021401	Spring-Pinch (L)	1	
	6	40021501	Spring-Pinch (R)	1	
3	7a	40745801	Guide-Sensor (A)	1	OKIFAX4550
3	7b	40745802	Guide-Sensor (A)	1	OKIOFFICE87
3	8a	40021701	Guide-Sensor (B)	2	OKIFAX4550
3	8b	40021702	Guide-Sensor (B)	2	OKIOFFICE87
	9	40481101	ADF SPRING	1	
	10	40199101	Cord-Earth	1	
	11		B SCREW FA		
	12	40021202	Roller Assy.-Sensor	1	
	13	40022001	Bearing-S	1	
	14	40020801	Gear-Z31	1	
	15		Plate-Support	1	
	16	40026301	Bar-Discharge	1	
	17	40461301	Film-Exit (DOC)	1	
2	18				
	19	1051002C0001	TR-13-7-6 Core	1	
3	20	41592101	Tape-Insulation	1	L=200mm

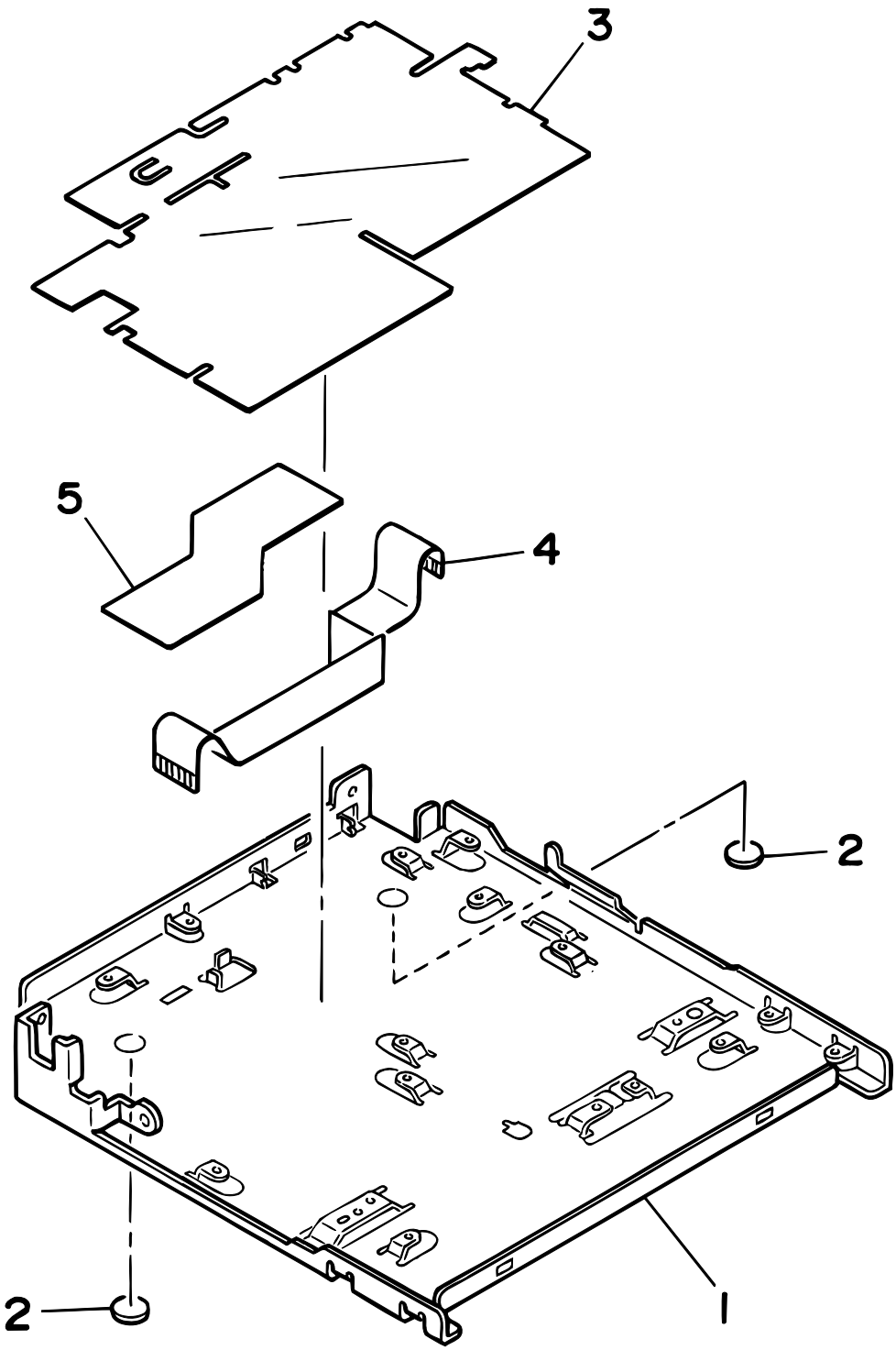
SECTION 9 COVER ASSEMBLY-TOP



Section 9 COVER ASSEMBLY-TOP

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
3	1		Cover-Top	1	OKI
	2	40606701	Holder-LED (A)	1	
3	3		Guide-Document (L)	1	OKI
3	4		Guide-Document (R)	1	OKI
	5	40022601	Spring-D	1	
	6	4PP4128-1268P001	PLATE EXIT	2	
	7	4PP4083-2024P001	EJECT ROLLER A	2	
	8	4PP4083-2328P003	PINION GEAR B	1	
	9		CS RING		
	10		B SCREW FA		

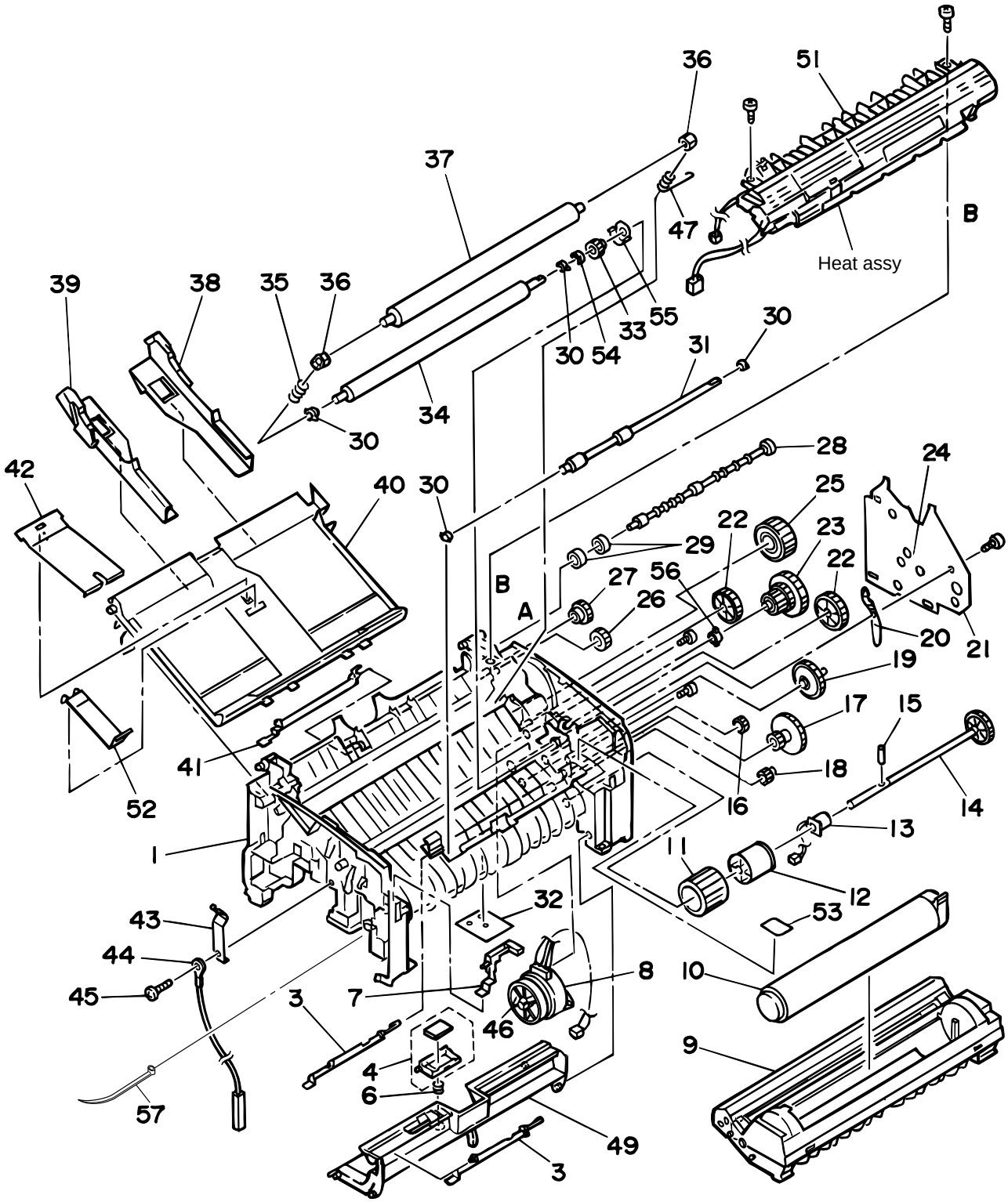
SECTION 10 PLATE ASSEMBLY-BASE



Section 10 PLATE ASSEMBLY-BASE

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1		Plate-Base A	1	
	2		Rubber Foot	2	
	3	40606901	Sheet-Insulation	1	
	4	40128001	Cord-Falt (FUJI CARD)	1	
	5		Sheet-FG	1	

SECTION 11 PRINTER BASE FRAME UNIT



Section 11 PRINTER BASE FRAME UNIT 1/2

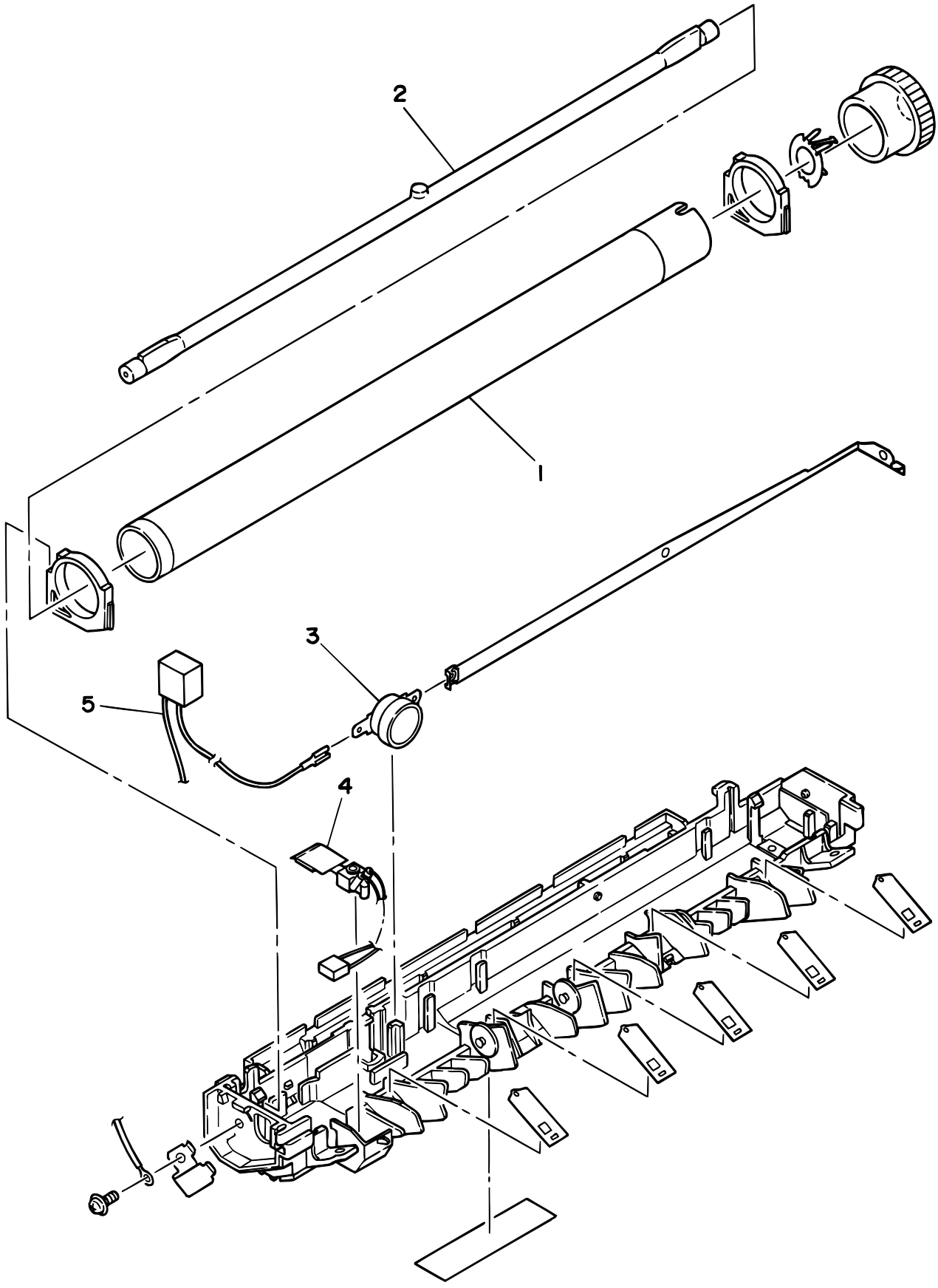
Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1	40593201	Frame Unit Assy	1	
	2				
	3	3PP4083-1191P001	Paper Sensor E	2	
	4	40721301	Separator Assy	1	
	5				
	6	40781701	Compression Spring S	1	
	7	3PA4083-1193G001	Toner Sensor Assy.	1	
	8	40496401	Moter-Pulse	1	
	9		Ep Unit	1	Consumable *1
	10		Toner Cartridge Unit	1	Consumable *1
	11	40779601	Hopping Roller	1	
	12	3PP4083-1128P001	Roller Holder (Hopping Roller)	1	
	13	3PB4083-1127P001	Magnet H (Hopping Shaft)	1	
	14	3PA4083-1133G001	Hopping Shaft Assy.	1	
	15	NK2-10-SUS	Knock Pin	1	
	16	4PP4083-1143P001	Idle Gear R	1	
	17	3PP4083-1184P001	Idle Gear 2R	1	
	18	3PP4083-1142P001	Gear R	1	
	19	2PP4083-1181P001	Idle Gear M	1	
	20	3PP4083-1189P001	Earth Plate A	1	
	21	3PP4083-1188P001	Plate Side M	1	
	22	3PP4083-1182P001	Idle Gear P	2	
	23	40721001	Idle Gear 3R	1	
	24	4PP4083-1165P001	Tension Plate	1	
	25	3PP4083-1185P001	Idle Gear Heat	1	
	26	4PP4083-1186P001	Idle Gear E (A)	1	
	27	3PP4083-1187P001	Idle Gear E (B)	1	
	28	3PP4083-1170P001	Drive Shaft E (Eject)	1	
	29	40074601	Eject Roller	2	
	30	3PP4083-1141P001	Resistration Bearing	5	
	31	3PB4083-1140P001	Resistration Roller	1	
5	32	41802101	Film-Guide_F	1	
	33	40737801	Gear T	1	
	34	40713601	Transfer Roller	1	
	35	4PP4083-1136P001	Spring pressure (L)	1	
	36	3PP4083-1161P001	Bearing BU (Back Up Roller)	2	
	37	40594601	Pressure Roller B (Back Up Roller)	1	
	38	3PP4083-1233P001	Paper Guide (R)	1	
	39	3PP4083-1232P001	Paper Guide (L)	1	
	40	1PP4083-1231P001	Paper Holder	1	
	41	3PP4083-1192P001	Paper Sensor Exit	1	
5	42	41802001	Spring-Hopper_F	1	
	43	40638001	Contact-CB		
	44	40638102	Conn, Cord-HV		
	45		Screw		
	46	40625401	Fan	1	
	47	4PP4083-1137P001	Spring Pressure (R)	1	
	48				

*1 = Only for OKIFAX4550/OKIOFFICE87

Section 11 PRINTER BASE FRAME UNIT 2/2

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	49	40562401	Sheet Guide	1	
	50				
~~3~~	~~51a~~	~~40592801~~	~~Heat Assy.~~	~~1~~	~~120V~~
7	51a	41982501	Heat Assy.	1	120V DCO-SQ1-1709
~~3~~	~~51b~~	~~40592802~~	~~Heat Assy.~~	~~1~~	~~230V~~
7	51b	41982502	Heat Assy.	1	230V DCO-SQ1-1709
	52	40034001	Stopper Spring	1	
	53	4PB4091-6047P001	Caution Label (TR)	1	230V
	54	40688601	Washer-TR	1	
	55	40710301	Guide-Gear T	1	
	56	40634701	Bearing-Gear	1	
3	57	LP6401-B1	TYING CORD	1	

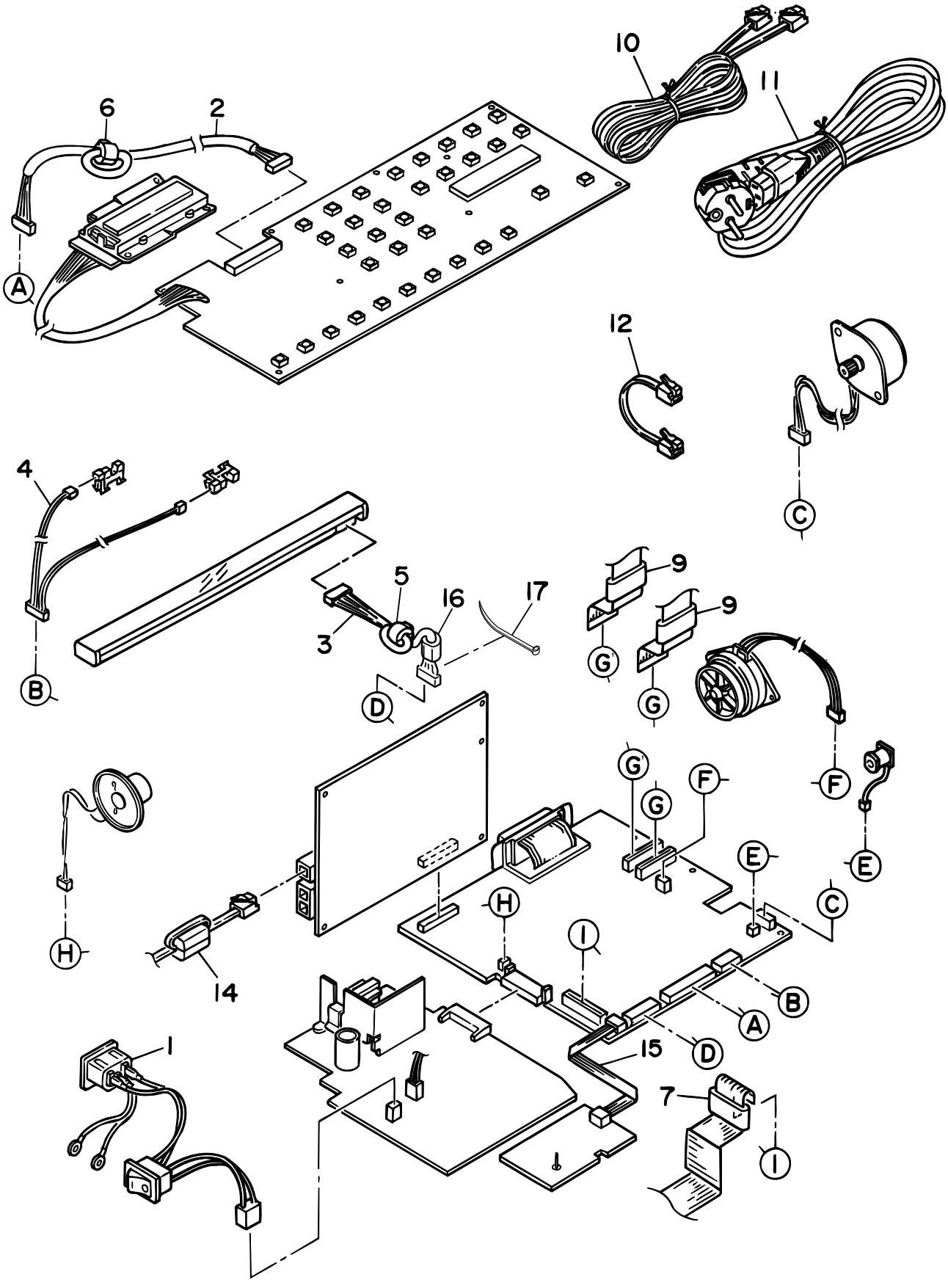
SECTION 12 PRINTER HEAT ASSY



Section 12 PRINTER HEAT ASSY.

Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1	3PB4083-1202P001	Heat Roller	1	
3	2a	41524001	Halogen Lamp	1	120V
3	2b	41524002	Halogen Lamp	1	230V
	3	4PB4083-1204P001	Thermostat	1	
5	4	3PB4083-1205P001	Thermistor	1	
	5	4PB4083-1213P001	Heat Cord	1	

SECTION 13 CABLES



Section 13 CABLES

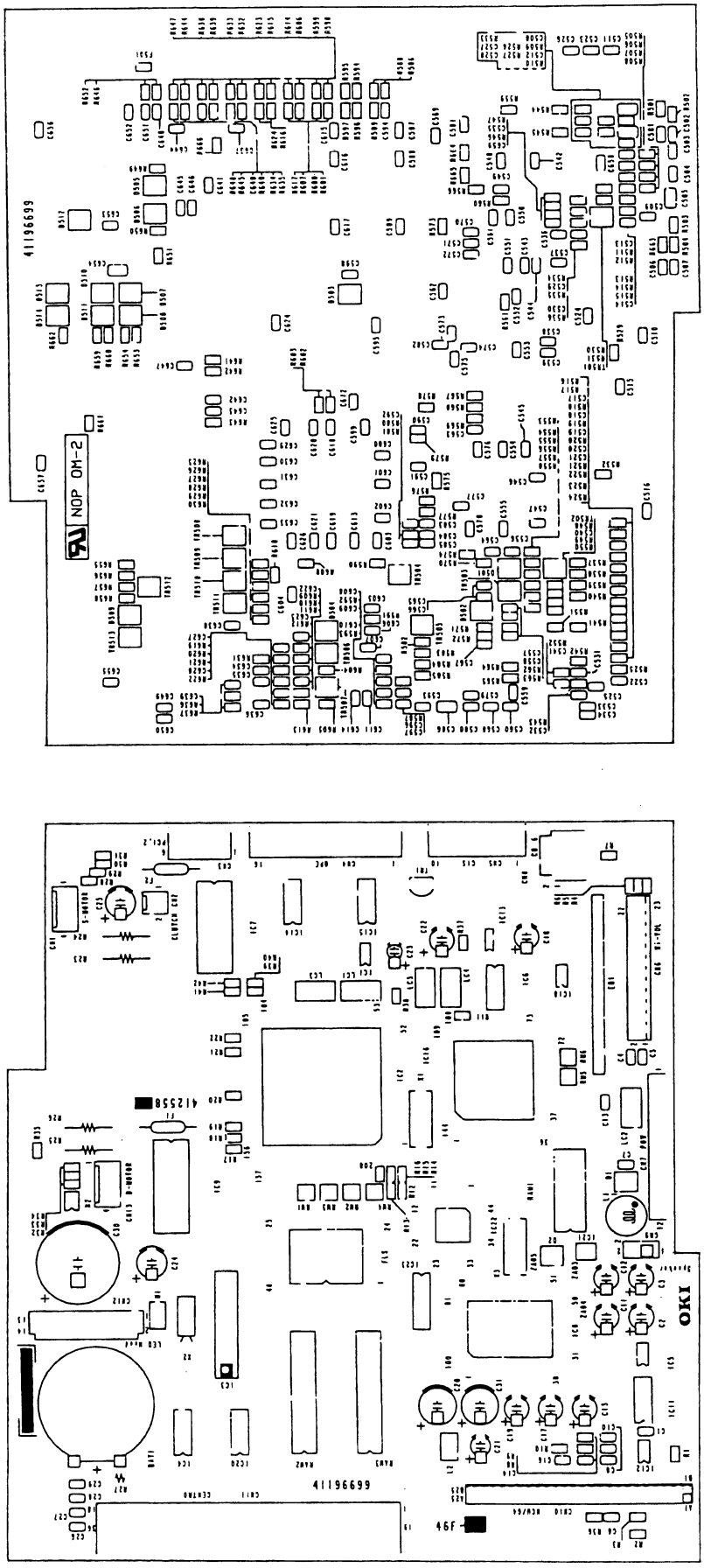
Rev.	No.	Oki parts Number	Description	Q ty	Remarks
	1	40635401	Connection Cord-Wire (AC)	1	
	2	40040001	Connection Cord-Wire (OPE)	1	
	3	40040201	Connection Cord-Wire (CIS)	1	
	4	40040301	Connection Cord-Wire (PC1/2)	1	
	5	105A1070C0003	TFC-20-10-10 Core	1	CIS-46F or R46
	6	105A1070C0004	TFC-23-11-14 Core	1	CPE-46F or R46
	7	105A1073C4002	SSC-40-12-M Core	1	HV-46F or R46
	8				
3	9	1051003C0001	FPC-25-20 Core	1 (2)	LED-46F or R46 (OKIFAX4550:1OKIOFFICE87:2)
	10		TEL/LINE Cable	1	Note-1
	11		AC CORD	1	Note-2
	12	4YS4111-5581P001	CORD (TEL1-TEL 2)	1	GER, Bosch only
	13				
	14	105A1068C1004	SFC-8 Core	1	For TEL/LINE Cord use
	15	40687701	Cord-Flat (SUMI CARD)	1	P6L-46F or R46
3	16	1051005C0003	RFC-8 Core	1	OKIOFFICE87
3	17	LP-6401-B1	TYING CORD	1	

Note 1: Parts will be supplied by OUK per country.

Note 2: Parts will be supplied by OUK per country.

APPENDIX E BOARD LAYOUT AND PARTS LIST

46F-PCB Assy (1/9~9/9)	(41196601)
R46-PCB Assy (1/10~10/10)	(41033201)
04W-PCB Assy (1/3~3/3)	(40071401)
EN9-PCB Assy (1/6~6/6)	(41144301)
INU-PCB Assy (1/4~4/4)	(41144501)
INU-PCB Assy (1/5~5/5)	(41144502)
MPW1546 POW(120VAC) Assy (1/5~5/5)	(S1PS1303)
MPW1446 POW(230VAC) Assy (1/6~6/6)	(S1PS1302)
P2H-PCB Assy (1/4~4/4)	(40599101)
P6L-PCB Assy (1/3~3/3)	(40386701)
G4N-PCB Assy (1/5~5/5)	(41033701)



46F-PCB Assy (1/9)
(41196601)

46F-PCB Assy (2/9)
(41196601)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	D1, D506	1SS392 (TE85R) D-Signal -C	6110225N0001	2	
2	D508, D509, D511, D514	SS100MA80VACP D-Signal -C	611A0000N0001	4	
3	D507, D510, D513	SS100MA80VKCP D-Signal -C	611A0000N0002	3	
4	D2, D502 ~ D505, D512	SS100MA80VSCP D-Signal -C	611A0000N0003	6	
5	D501	RD4.3M-B3 D-Zener -C	613A0233M0092C	1	
6	R27	16ZM5-5 RES-Zero Ω -P	3213421P001	1	
7	R538	CR/RK73H/ERJ/MCRF102 RES-MET RN -C	3235003F0102	1	
8	R1, R604, R642	CR/RK73H/ERJ/MCRF103 RES-MET RN -C	3235003F0103	3	
9	R549, R620	CR/RK73H/ERJ/MCRF104 RES-MET RN -C	3235003F0104	2	
10	R630	CR/RK73H/ERJ/MCRF121 RES-MET RN -C	3235003F0121	1	
11	R537,R641	CR/RK73H/ERJ/MCRF122 RES-MET RN -C	3235003F0122	2	
12	R502, R571	CR/RK73H/ERJ/MCRF123 RES-MET RN -C	3235003F0123	2	
13	R505	CR/RK73H/ERJ/MCRF124 RES-MET RN -C	3235003F0124	1	
14	R625	CR/RK73H/ERJ/MCRF162 RES-MET RN -C	3235003F0162	1	
15	R546, R628, R629	CR/RK73H/ERJ/MCRF202 RES-MET RN -C	3235003F0202	3	
16	R530, R550	CR/RK73H/ERJ/MCRF204 RES-MET RN -C	3235003F0204	2	
17	R561	CR/RK73H/ERJ/MCRF221 RES-MET RN -C	3235003F0221	1	
18	R507	CR/RK73H/ERJ/MCRF241 RES-MET RN -C	3235003F0241	1	
19	R572	CR/RK73H/ERJ/MCRF302 RES-MET RN -C	3235003F0302	1	
20	R513	CR/RK73H/ERJ/MCRF333 RES-MET RN -C	3235003F0333	1	

46F-PCB Assy (3/9)
(41196601)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
21	R581, R503	CR/RK73H/ERJ/MCRF362 RES-MET RN -C	3235003F0362	2	
22	R508	CR/RK73H/ERJ/MCRF391 RES-MET RN -C	3235003F0391	1	
23	R40	CR/RK73H/ERJ/MCRF393 RES-MET RN -C	3235003F0393	1	
24	R563	CR/RK73H/ERJ/MCRF472 RES-MET RN -C	3235003F0472	1	
25	R562, R501	CR/RK73H/ERJ/MCRF512 RES-MET RN -C	3235003F0512	2	
26	R39, R41, R42, R526, R527, R511	CR/RK73H/ERJ/MCRF513 RES-MET RN -C	3235003F0513	6	
27	R509, R510, R514	CR/RK73H/ERJ/MCRF563 RES-MET RN -C	3235003F0563	3	
28	R512	CR/RK73H/ERJ/MCRF623 RES-MET RN -C	3235003F0623	1	
29	R627	CR/RK73H/ERJ/MCRF682 RES-MET RN -C	3235003F0682	1	
30	R506, R626	CR/RK73H/ERJ/MCRF821 RES-MET RN -C	3235003F0821	2	
31	R547	CR/RK73H/ERJ/MCRF911 RES-MET RN -C	3235003F0911	1	
32	R515, R541, R551, R533, R558, R564, R565, R576, R577	CR/RK73K/ERJ/MCRJ100 RES-MET RN -C	3235003J0100	9	
33	R586, R619, R622	CR/RK73K/ERJ/MCRJ101 RES-MET RN -C	3235003J0101	3	
34	R522, R524, R548, R588, R589, R638, R639, R648, R649, R652	CR/RK73K/ERJ/MCRJ102 RES-MET RN -C	3235003J0102	10	
35	R516, R521, R523, R525, R560, R573, R580, R592, R593, R609 ~ R612, R636, R637, R655 ~ R658	CR/RK73K/ERJ/MCRJ103 RES-MET RN -C	3235003J0103	19	
36	R582 ~ R584	CR/RK73/ERJ/MCRJ162 RES-MET RN -C	3235003J0162	3	
37	R556, R557, R594, R595, R598, R599, R606, R614, R615, R623	CR/RK73K/ERJ/MCRJ220 RES-MET RN -C	3235003J0220	10	
38	R519, R543, R552, R555, R574, R651, R653, R654, R659 ~ R662	CR/RK73K/ERJ/MCRJ221 RES-MET RN -C	3235003J0221	12	

46F-PCB Assy (4/9)
(41196601)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
39	R535, R585, R632~R635, R644	CR/RK73K/ERJ/MCRJ222 RES-MET RN -C	3235003J0222	7	
40	R517, R518, R520	CR/RK73K/ERJ/MCRJ301 RES-MET RN -C	3235003J0301	3	
41	R578	CR/RK73K/ERJ/MCRJ331 RES-MET RN -C	3235003J0331	1	
42	R596, R597, R600, R601, R607, R616, R617, R624, R645 ~ R647	CR/RK73K/ERJ/MCRJ332 RES-MET RN -C	3235003J0332	11	
43	R12 ~ R18, R20 ~ R22, R570, R590, R603	CR/RK73K/ERJ/MCRJ470 RES-MET RN -C	3235003J0470	13	
44	R666	CR/RK73K/ERJ/MCRJ471 RES-MET RN -C	3235003J0471	1	
45	R540, R591	CR/RK73K/ERJ/MCRJ472 RES-MET RN -C	3235003J0472	2	
46	R10, R534, R545, R566 ~ R569, R587, R605, R613	CR/RK73K/ERJ/MCRJ473 RES-MET RN -C	3235003J0473	10	
47	R621, R640, R650	CR/RK73K/ERJ/MCRJ474 RES-MET RN -C	3235003J0474	3	
48	R665	CR/RK73M/ERJ/MCRJ479 RES-MET RN -C	3235003J0479	1	
49	R664	CR/RK73M/ERJ/MCRJ519 RES-MET RN -C	3235003J0519	1	
50	R531	CR/RK73K/ERJ/MCRJ683 RES-MET RN -C	3235003J0683	1	
51	R539	CR/RK73K/ERJ/MCRJ752 RES-MET RN -C	3235003J0752	1	
52	R631, R643	CR/RK73K/ERJ/MCRJ822 RES-MET RN -C	3235003J0822	2	
53	R25, R26	MSF1/2B1ΩJ RES-MET OX	324A1001J0109	2	
54	R23, R24	MSF1/2B2ΩJ RES-MET OX -	324A1001J0209	2	
55	R2 ~ R9, R11, R28 ~ R35, R37, R38, R533, R536, R544, R559, R575, R579, R602, R608, R618	CR/RK73Z/ERJ/MCRJ-0V	3255003P0001	28	
56	RM1 ~ RM4	MNR14ABJ680 RES-Block -C	334A5012J0680	4	
57					

46F-PCB Assy (5/9)
(41196601)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
58	C580	GRM/UMK/MCH/101CH CAP-Ceramic -C	3033003C0101	1	
59	C590, C591, C646	GRM/UMK/MCH/150CH CAP-Ceramic -C	3033003C0150	3	
60	C549	GRM/UMK/MCH/221CH CAP-Ceramic -C	3033003C0221	1	
61	C563, C645	GRM/UMK/MCH/330CH CAP-Ceramic -C	3033003C0330	2	
62	C564, C611	GRM/UMK/MCH/391CH CAP-Ceramic -C	3033003C0391	2	
63	C648, C651	GRM/UMK/MCH/470CH CAP-Ceramic -C	3033003C0470	2	
64	C5, C14, C28, C29, C504, C511, C528, C534, C536, C543, C544, C547, C550, C561, C574, C582, C589, C596 ~ C598, C606, C608 ~ C610, C617, C623, C627, C628, C636, C639, C640, C650, C659	GRM/UMK/MCH/102B 50V CAP-Ceramic -C	3036003K0102	33	
65	C515, C526, C532, C595, C599, C601, C620, C624, C653, C655 ~ C657	GRM/UMK/MCH/103B 50V CAP-Ceramic -C	3036003K0103	14	
66	C517 ~ C519, C531	GRM/TMK/MCH/223B 25V CAP-Ceramic -C	3036003K0223	4	
67	C502, C612, C634, C635, C642, C643	GRM/UMK/MCH/332B 50V CAP-Ceramic -C	3036003K0332	6	
68	C514, C520, C541	GRM/TMK/MCH/473B 25V CAP-Ceramic -C	3036003K0473	3	
69	C594	GRM/UMK/MCH/561B 50V CAP-Ceramic -C	3036003K0561	1	
70	C1, C4, C6 ~ C10, C13, C16, C26, C27, C501, C503, C506, C509, C510, C513, C516, C521 ~ C525, C527, C530, C533, C537 ~ C540, C542, C548, C551, C554, C556 ~ C560, C562, C565 ~ C573, C575, C577, C579, C581, C583~C585, C587, C588, C592, C593, C604, C605, C607, C613 ~ C616, C621, C622, C629, C633, C637, C638, C641, C644, C647, C649, C652, C658	GRM/TMK/MCH/104Z 25V CAP-Ceramic -C	3036003Z0104	79	
71	C535	GRM/LMK/MCH/105Z 10V CAP-Ceramic -C	3036003Z0105	1	

46F-PCB Assy (6/9)
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REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
72	C552, C553	GRM/UMK/MCH/180CH CAP-Ceramic -C	3033003C0180	2	
73	C508, C512	CC2012SL1H681J 50V CAP-Ceramic -C	303A3007K0681	2	
74	C654	CK2012F1C105Z 16V CAP-Ceramic -C 1µF	303A6008Z1105	1	
75	C505	CK2012F1C474Z 16V CAP-Ceramic -C	303A6008Z1474	1	
76	C586	CK2012F1H104Z 50V CAP-Ceramic -C	303A6008Z3104	1	
77	C3, C18	UVX/SME10VB-100-0A CAP-Alum(CE) -P	3041103A1101	2	
78	C2, C12, C17, C19, C22	UVX/SME16VB-10-0A CAP-Alum(CE) -P	3041103C1100	5	
79	C15	UVX/SME25VB-22-0A CAP-Alum(CE) -P	3041103E1220	1	
80	C21	16MS5-10M 16V CAP-Alum(CE) -10uF	304A1046C1100	1	
81	C11	UVX/SME-16V-47uF 16V CAP-Alum(CE) -P	3041003C1470	1	
82	C23	50MS5-0.68M 50V CAP-Alum(CE) -	304A1046H1688	1	
83	C30	UVS1A332MHA 10V CAP-Alum(CE) -	304A1137A1332	1	
84	C20	KMG25VB-330M-FC 25V CAP-Alum(CE) -	304A1180E1331	1	
85	C24, C25	KMG50VB-47M-FC 50V CAP-Alum(CE) -47uF	304A1180H1470	2	
86	C31	KMG10VB-470M-FC 10V CAP-Alum(CE) -	304A1180A1471	1	
87					
88	IC20	74LS07FP Digital IC-BIP-S	700A0503N007	1	
89	IC15	SN74AHCT14NSR Digital IC-MOS-B	7022850N3014	1	
90	IC16	MB87A138PFV-G Digital IC-MOS-F	7024620N2001	1	
91	IC23	74HCT245FP/ Digital IC-MOS-B	7021703N3245	1	

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REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
92	IC4	74HC00FP Digital IC-MOS-S	702A1703N0000	1	
93	IC14	74HC126FP Digital IC-MOS-S	702A1703N0126	1	
94	IC5	NJM386M Analog-BIPLIN -S	720A0028N0006	1	
95	IC12	NJM4558M Analog-BIPLIN -S	720A0028N0039	1	
96	IC13	NJM318E Analog-BIPLIN -S	720A0028N0113	1	
97	IC18	UPC393G2 Analog-BIPLIN -S	720A0523N0011	1	
98	IC7, IC9	MTD2005FB Analog-BIPLIN -S	720A1816N0001	2	
99	IC1	M51953AFP Analog-BIPLIN -S	720A4022N0008	1	
100	IC21	R1110N331B-TR Analog-MOSLIN-S	7301042N0001	1	
101	IC11	TC4051BF Analog-MOS SW-S	731A0525N0001	1	
102	IC6	CXD1172AM-T4 Analog-MOSdata-B	7320034N1001	1	
103	IC8	FM336 Analog-MOSdata-F	7320093N0003	1	
104	IC22	LSI2032E-110LT44-D01 Memory-PLA -F	8180338N0001	1	
105	IC2	HG72C706H03FD CPU-MOS (ROM) -F	8530433N0003	1	
106					
107	RAM1	52256CN-70LL Memory-MOSSRAM-S	804003N8303	1	
108	RAM2, RAM3	OR-Memory-MOSDRAM-S	41087601	2	
109	FLS	FLASH MEM. IC	41424601	1	
110	IC3	MSM6242RS CPU-Interface -	855A0424F0034	1	
111	LC3, LC4	MT-SL330KB COMP PAR-LC-	342A1013K0330	2	

46F-PCB Assy (8/9)
(41196601)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
112	LC1, LC2, LC5	MT-Y223NB COMP PAR-LC-	342A1013N0223	3	
113	L2	NL322522-100J-3 Coil-HF -C	353A4007J0100	1	
114	L1	LHL08TB-103J Coil-HF -P	3531001J0103	1	
115					
116	TR506	2SA1162-Y TR-PNP/H FREQ-C	600A1025M0017Y	1	
117	TR513	2SA1338 TR-PNP/H FREQ-C	600A1032N0010	1	
118	TR1	2SA950-Y TR-PNP/H FREQ-	600A1125M0011Y	1	
119	TR501, TR503, TR507	2SC2712-Y/G TR-PNP/H FREQ-C	602A1025M0033	3	
120	TR502, TR505, TR512	DTC124EK TR-PNP/H FREQ-C	602A1035N0004	3	
121	TR504	DTC123YK TR-PNP/H FREQ-C	602A1035N0019	1	
122	TR508 ~ TR511	DTC114TKA/RN1411 TR-PNP/H FREQ-C	6021003N0002	4	
123					
124	CN11	57RE-40360-830B-D29 Connector-SQR-	2201001P0360	1	
125	CN7	12JQ-ST Connector-PCB-	2244100P0120	1	
126	CN8	06FE-ST-VK-N Connector-PCB-	2244101P0060	1	
127	CN2	00-8263-0212-00-000 Connector-PCB-	224A3357P0020	1	
128	CN1, CN13	00-8263-0412-00-000 Connector-PCB-	224A3357P0040	2	
129	CN3	S6B-PH-K-S Connector-PCB-	224A3531P0060	1	
130	CN5	S10B-PH-K-S Connector-PCB-	224A3531P0101	1	
131	CN4	S16B-PH-K-S Connector-PCB-	224A3531P00160	1	

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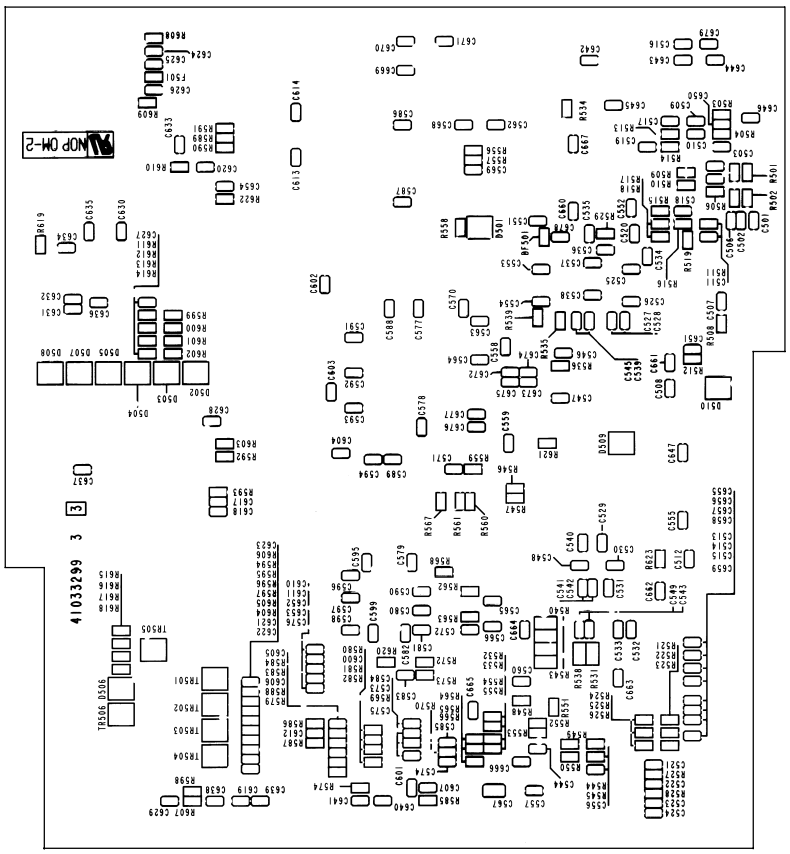
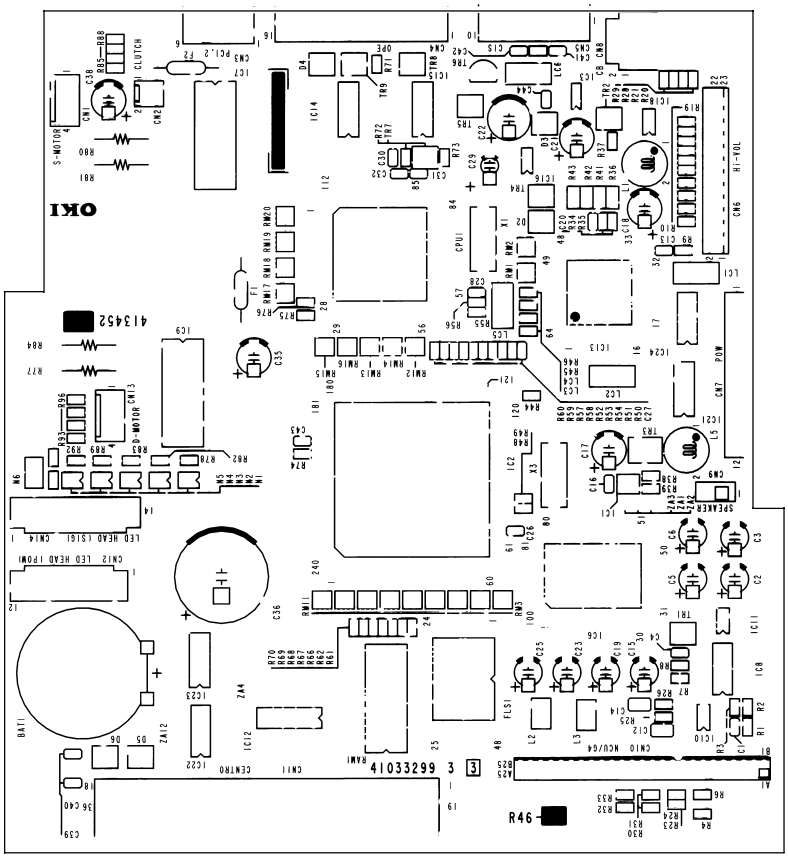
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
132	CN9	B2B-EH Connector-PCB-	224A3535P0020	1	
133	CN12	ZC-014 Connector-PCB-	224A3590P0140	1	
134	CN6	23FE-BT-VK-N Connector-PCB-	224A4134P0230	1	
135	CN10	6-176135-6 Connector-PCB-	224A4325P0500	1	
136	X1	HC-49/U03C-20.00MHz OSC-Crystal -C	3801001B0003	1	
137	X2	P-3-32.768KHZ OSC-Crystal -	380A1201A0001	1	
138	X3	HC-49/U03C-28.224MHz OSC-Crystal -C	3801001B0005	1	
139	BAT1	CR2430-FT6 BATT-Primary -	455A3027P0001	1	
140	F501	431001 FUSE -C	5402200S0102	1	
141	F1, F2	251-001 FUSE-	540A2208S1102	2	
142	EB1		LH-31313-165	1	
143					
144			LP-7134	2	L=20mm
145		Plate-Earth (CTR)	40771901	1	
146		Screw	PSW3-4C	1	





R46-PCB Assy (1/10)
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R46-PCB Assy (2/10)
(41033201)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	D510	1SS392 (TE85R) D-Signal -C	6110225N0001	1	
2	D506, D509	SS100MA80VACP D-Signal -C	611A0000N0001	2	
3	D3 ~ D5, D501, D508	SS100MA80VSCP D-Signal -C	611A0000N0003	5	
4	D6, D502 ~ D505, D507	SB007T03C D-Signal -C	611A0232N0002	6	
5	D2	RD4.7M-B2 D-Zener -C	613A0233M0102B	1	
6					
7	R525, R550	CR/RK73H/ERJ/MCRF102 RES-MET RN -C	3235003F0102	2	
8	R71, R544, R603	CR/RK73H/ERJ/MCRF103 RES-MET RN -C	3235003F0103	3	
9	R3, R523, R587	CR/RK73H/ERJ/MCRF104 RES-MET RN -C	3235003F0104	3	
10	R526, R592, R606	CR/RK73H/ERJ/MCRF122 RES-MET RN -C	3235003F0122	3	
11	R1	CR/RK73H/ERJ/MCRF123 RES-MET RN -C	3235003F0123	1	
12	R505	CR/RK73H/ERJ/MCRF124 RES-MET RN -C	3235003F0124	1	
13	R596	CR/RK73H/ERJ/MCRF163 RES-MET RN -C	3235003F0163	1	
14	R504	CR/RK73H/ERJ/MCRF202 RES-MET RN -C	3235003F0202	1	
15	R595, R605	CR/RK73H/ERJ/MCRF203 RES-MET RN -C	3235003F0203	2	
16	R516, R524	CR/RK73H/ERJ/MCRF204 RES-MET RN -C	3235003F0204	2	
17	R536	CR/RK73H/ERJ/MCRF221 RES-MET RN -C	3235003F0221	1	
18	R34, R549	CR/RK73H/ERJ/MCRF222 RES-MET RN -C	3235003F0222	2	
19	R502	CR/RK73H/ERJ/MCRF241 RES-MET RN -C	3235003F0241	1	
20	R510	CR/RK73H/ERJ/MCRF333 RES-MET RN -C	3235003F0333	1	

R46-PCB Assy (3/10)
(41033201)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
21	R519	CR/RK73H/ERJ/MCRF362 RES-MET RN -C	3235003F0362	1	
22	R507	CR/RK73H/ERJ/MCRF391 RES-MET RN -C	3235003F0391	1	
23	R2, R7, R513, R514	CR/RK73H/ERJ/MCRF513 RES-MET RN -C	3235003F0513	4	
24	R25, R26, R506	CR/RK73H/ERJ/MCRF563 RES-MET RN -C	3235003F0563	3	
25	R509, R594	CR/RK73H/ERJ/MCRF623 RES-MET RN -C	3235003F0623	2	
26	R501	CR/RK73H/ERJ/MCRF821 RES-MET RN -C	3235003F0821	1	
27	R503	CR/RK73H/ERJ/MCRF911 RES-MET RN -C	3235003F0911	1	
28	R35	CR/RK73H/ERJ/MCRF912 RES-MET RN -C	3235003F0912	1	
29	R97, R508, R532, R533, R552, R553, R572, R573, R611 ~ R614	CR/RK73K/ERJ/MCRJ100 RES-MET RN -C	3235003J0100	12	
30	R581, R586	CR/RK73K/ERJ/MCRJ101 RES-MET RN -C	3235003J0101	2	
31	R16, R18, R37, R609	CR/RK73K/ERJ/MCRJ102 RES-MET RN -C	3235003J0102	4	
32	R10, R15, R17, R19, R73, R529, R539, R557, R570, R580, R582 ~ R585, R598, R607, R615 ~ R618	CR/RK73K/ERJ/MCRJ103 RES-MET RN -C	3235003J0103	20	
33	R62	CR/RK73/ERJ/MCRJ151 RES-MET RN -C	3235003J0151	1	
34	R13, R52, R527, R528	CR/RK73K/ERJ/MCRJ221 RES-MET RN -C	3235003J0221	4	
35	R515, R566	CR/RK73K/ERJ/MCRJ222 RES-MET RN -C	3235003J0222	2	
36	R11, R12, R14	CR/RK73K/ERJ/MCRJ301 RES-MET RN -C	3235003J0301	3	
37	R608	CR/RK73K/ERJ/MCRJ332 RES-MET RN -C	3235003J0332	1	
38	R72	CR/RK73K/ERJ/MCRJ362 RES-MET RN -C	3235003J0362	1	
39	R57, R60	CR/RK73K/ERJ/MCRJ470 RES-MET RN -C	3235003J0470	2	

R46-PCB Assy (4/10)
(41033201)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
40	R522, R548, R554, R555, R564, R565, R589	CR/RK73K/ERJ/MCRJ472 RES-MET RN -C	3235003J0472	7	
41	R23, R30, R53, R58, R59, R78, R82, R83, R89, R92, R98, R517, R535, R546, R547, R559 ~ R561, R567 ~ R569, R574, R579, R599 ~ R602	CR/RK73K/ERJ/MCRJ473 RES-MET RN -C	3235003J0473	27	
42	R588, R591, R610, R622	CR/RK73K/ERJ/MCRJ474 RES-MET RN -C	3235003J0474	4	
43	R556	CR/RK73M/ERJ/MCRJ512 RES-MET RN -C	3235003J0512	1	
44	R518	CR/RK73K/ERJ/MCRJ683 RES-MET RN -C	3235003J0683	1	
45	R521	CR/RK73K/ERJ/MCRJ752 RES-MET RN -C	3235003J0752	1	
46	R593, R597, R604	CR/RK73K/ERJ/MCRJ822 RES-MET RN -C	3235003J0822	3	
47	R531, R538	RM73B2A101F RES-MET RN -C	323A5003F0101	2	
48	R42, R43	RM73B2A301F RES-MET RN -C	323A5003F0301	2	
49	R540, R541	RM73B2A121J RES-MET RN -C	323A5003J0121	2	
50	R542, R543	RM73B2A200J RES-MET RN -C	323A5003J0200	2	
51	R36	2125JPW RES-MET RN -C	323A5003P0001	1	
52	R77, R84	MSF1/2B1ΩJ RES-MET OX -	324A1001J0109	2	
53	R80, R81	MSF1/2B2ΩJ RES-MET OX -	324A1001J0209	2	
54	R4, R6, R8, R9, R20, R21, R24, R28, R29, R31 ~ R33, R39, R44 ~ R51, R54 ~ R56, R61, R66 ~ R70, R74, R85 ~ R88, R93 ~ R96, R512, R534, R545, R551, R558, R562, R563, R620, R623	CR/RK73Z/ERJ/MCRJ-0V RES-Zero Ω -C	3255003P0001	48	
55					
56	RM3 ~ RM7, RM12 ~ RM16	ACA3216M4-300-T Core - -C	1055010C0001	10	

R46-PCB Assy (5/10)
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REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
57	RM1, RM2, RM8 ~ RM11, RM17 ~ RM20	CN1J4/EXBV8V0Ω RES-Block -C	3345003P0001	10	
58					
59	C28, C557	GRM/UMK/MCH/101CH CAP-Ceramic -C	3033003C0101	2	
60	C565, C566	GRM/UMK/MCH/150CH CAP-Ceramic -C	3033003C0150	2	
61	C546, C547	GRM/UMK/MCH/180CH CAP-Ceramic -C	3033003C0180	2	
62	C13, C27, C536, C569, C572, C610, C611, C652 ~ C654, C678	GRM/UMK/MCH/221CH CAP-Ceramic -C	3033003C0221	11	
63	C601	GRM/UMK/MCH/391CH CAP-Ceramic -C	3033003C0391	1	
64	C501, C513, C524, C529, C531 ~ C533, C535, C539, C545, C553, C554, C558, C559, C568, C570, C571, C573 ~ C577, C580, C581, C585, C587, C588, C594, C598 ~ C600, C606, C607, C612, C619, C625, C650	GRM/UMK/MCH/102B 50V CAP-Ceramic -C	3036003K0102	37	
65	C20, C508, C515, C516, C562, C626, C629, C637, C669 ~ C671	GRM/UMK/MCH/103B 50V CAP-Ceramic -C	3036003K0103	11	
66	C43	GRM/UMK/MCH/152B 50V CAP-Ceramic -C	3036003K0152	1	
67	C26	GRM/UMK/MCH/222B 50V CAP-Ceramic -C	3036003K0222	1	
68	C521, C655 ~ C657	GRM/TMK/MCH/223B 25V CAP-Ceramic -C	3036003K0223	4	
69	C1, C617, C618, C621, C622	GRM/UMK/MCH/332B 50V CAP-Ceramic -C	3036003K0332	5	
70	C507, C522, C658	GRM/TMK/MCH/473B 25V CAP-Ceramic -C	3036003K0473	3	
71	C542, C548	GRM/TMK/MCH/103Z 50V CAP-Ceramic -C	3036003Z0103	2	

R46-PCB Assy (6/10)
(41033201)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
72	C4, C16, C30 ~ C32, C39 ~ C42, C44, C503, C504, C506, C509, C512, C514, C517 ~ C520, C523, C525 ~ C528, C530, C534, C537, C538, C540, C541, C543, C544, C549, C551, C552, C555, C556, C560, C563, C564, C578, C579, C582 ~ C584, C586, C589 ~ C593, C595 ~ C597, C602 ~ C605, C613, C614, C620, C623, C624, C628, C630, C632 ~ C636, C638 ~ C647, C651, C659, C660 ~ C667	GRM/TMK/MCH/104Z 25V CAP-Ceramic -C	3036003Z0104	91	
73	C510	GRM/LMK/MCH/105Z 10V CAP-Ceramic -C	3036003Z0105	1	
74	C502	EMK107F474ZA-T 16V CAP-Ceramic -C	3036008Z0474	1	
75	C12, C14	CC2012SL1H681J 50V CAP-Ceramic -C	303A3007K0681	2	
76	C567	CK2012F1H104Z 50V CAP-Ceramic -C	303A6008Z3104	1	
77	C3	UVX/SME10VB-100-OA CAP-Alum(CE) -P	3041103A1101	1	
78	C2, C5, C15, C19, C25	UVX/SME16VB-10-OA CAP-Alum(CE) -P	3041103C1100	5	
79	C6, C23	UVX/SME25VB-22-OA CAP-Alum(CE) -P	3041103E1220	2	
80	C18, C21	16MS5-47M 16V CAP-Alum(CE) -47uF	304A1046C1470	2	
81	C29	50MS5-0.68M 50V CAP-Alum(CE) -	304A1046H1688	1	
82	C36	UVS1A332MHA 10V CAP-Alum(CE) -	304A1137A1332	1	
83	C22	KMG10VB-470M-FC 10V CAP-Alum(CE) -	304A1180A1471	1	
84	C17, C35, C38	KMG50VB-47M-FC 50V CAP-Alum(CE) -47uF	304A1180H1470	3	
85					
86	IC12	SN74LVC161284DGGR Digital IC-MOS-S	7022350N1284	1	
87	IC23	SN74LVC08ANSR Digital IC-MOS-S	7022450N3008	1	

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REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
88	IC2	TC223G12CF-7001(Z) Digital IC-MOS-F	7024925N0015	1	
89	IC21	74HC08FP Digital IC-MOS-S	702A1703N0008	1	
90	IC15	74HC14FP Digital IC-MOS-S	702A1703N0014	1	
91	IC14	74HC126FP Digital IC-MOS-S	702A1703N0126	1	
92	IC24	74HC175FP Digital IC-MOS-S	702A1703N0175	1	
93	IC22	NR8576AB Analog-BIPLIN -S	7201540N0001	1	
94	IC11	NJM386M Analog-BIPLIN -S	720A0028N0006	1	
95	IC10	NJM4558M Analog-BIPLIN -S	720A0028N0039	1	
96	IC3	NJM318E Analog-BIPLIN -S	720A0028N0113	1	
97	IC18	UPC393G2 Analog-BIPLIN -S	720A0523N0011	1	
98	IC7, IC9	MTD2005FB Analog-BIPLIN -S	720A1816N0001	2	
99	IC16	M51953AFP Analog-BIPLIN -S	720A4022N0008	1	
100	IC1	RN5RF33BA-TR Analog-MOSLIN-C	7301042N0004	1	
101	IC8	TC4051BF Analog-MOS SW-S	731A0525N0001	1	
102	IC6	FM336 Analog-MOSdata-F	7320093N0003	1	
103	FLS1	MBM29LV800TA-70PFTN Memory-MOSEEPR-S	8163625N0000	1	
104	CPU1	HD6437034AE48F CPU-MOS (ROM)-F	8530432N0008	1	
105	IC13	LC821033 CPU-Interface -F	8550901N0001	1	
106	RAM1	OR-Memory-MOSDRAM-S	40914901	1	
107					

R46-PCB Assy (8/10)
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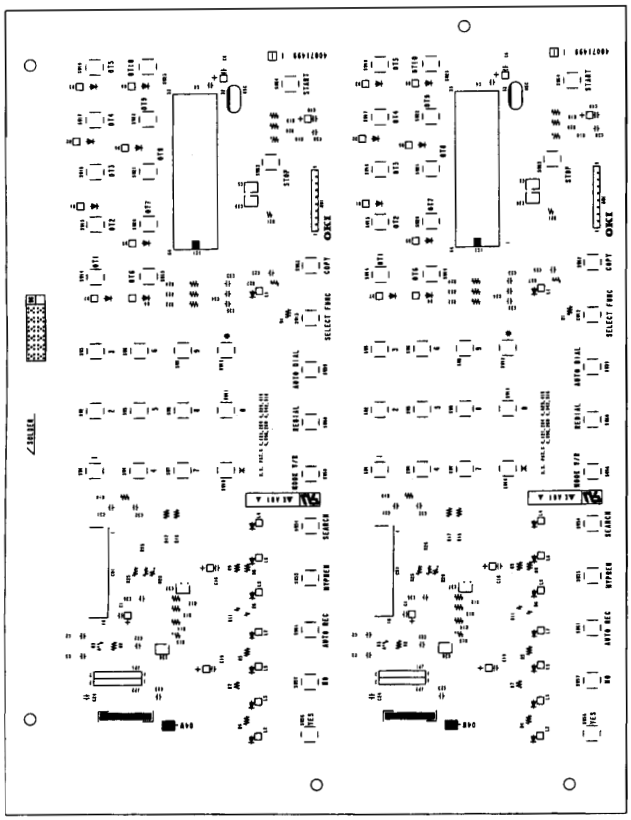
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
108	LC6	MT-SL330KB COMP PAR-LC-	342A1013K0330	1	
109	LC1, LC2, LC5	MT-Y223NB COMP PAR-LC-	342A1013N0223	3	
110	BF501, LC3, LC4, R75, R76	ACB1608M-300-T Filter-PW line -C	3775001P0001	5	
111	L1	LHL08TB-181K Coil-HF -P	3531001K0181	1	
112	L2, L3	NL322522-100J-3 Coil-HF -C	353A4007J0100	2	
113	L5	LHL08TB-103J Coil-HF -P	3531001J0103	1	
114					
115	TR501 ~ TR504	DTA114EKAT146 TR-PNP/H FREQ-C	600A1035N0003	4	
116	TR9	2SA1162-Y TR-PNP/H FREQ-C	600A1025M0017Y	1	
117	TR506	2SA1338 TR-PNP/H FREQ-C	600A1032N0010	1	
118	TR6	2SA950-Y TR-PNP/H FREQ-	600A1125M0011Y	1	
119	TR3	2SB766A-Q/R TR-PNP/L-FREQ-C	601A1130M0001	1	
120	TR1, TR4, TR8	2SC2712-Y/G TR-PNP/H-FREQ-C	602A1025M0033	3	
121	TR2, TR5, TR505	DTC124EK TR-PNP/H FREQ-C	602A1035N0004	3	
122	TR7	DTC123YK TR-PNP/H FREQ-C	602A1035N0019	1	
123					
124	CN11	57RE-40360-830B-D29 Connector-SQR-	2201001P0360	1	
125	CN12	SLD12S-2 Connector-PCB-	2243001P0120	1	
126	CN14	SLD14S-2 Connector-PCB-	2243001P0140	1	
127	CN7	12JQ-ST Connector-PCB-	2244100P0120	1	

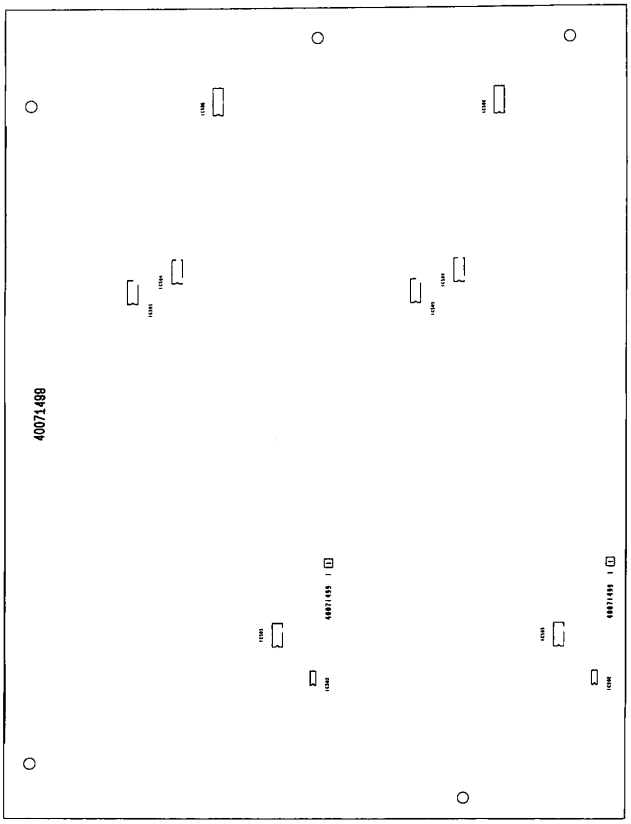
R46-PCB Assy (9/10)
(41033201)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
128	CN8	06FE-ST-VK-N Connector-PCB-	2244101P0060	1	
129	CN2	00-8263-0212-00-000 Connector-PCB-	224A3357P0020	1	
130	CN1, CN13	00-8263-0412-00-000 Connector-PCB-	224A3357P0040	2	
131	CN3	S6B-PH-K-S Connector-PCB-	224A3531P0060	1	
132	CN5	S10B-PH-K-S Connector-PCB-	224A3531P0101	1	
133	CN4	S16B-PH-K-S Connector-PCB-	224A3531P0160	1	
134	CN9	B2B-EH Connector-PCB-	224A3535P0020	1	
135	CN6	23FE-BT-VK-N Connector-PCB-	224A4134P0230	1	
136	CN10	6-176135-6 Connector-PCB-	224A4325P0500	1	
137					
138	X1	HC-49/U03C-20.00MHz OSC-Crystal -C	3801001B0003	1	
139	X3	HC-49/U03C-28.224MHz OSC-Crystal -C	3801001B0005	1	
140	BAT1	CR2430-FT6 BATT-Primary -	455A3027P0001	1	
141	F501	431001 FUSE -C	5402200S0102	1	
142	F1, F2	251-001 FUSE -	540A2208S1102	2	
143	N1 ~ N5	MEM2012TC151T001 Core- -C	1055012C0001	5	
144	N6	ACF321825-680-T Core- -C	1055011C0001	1	
145					
146			LP-7134	1	L=20mm
147		Plate-Earth (CTR)	40771901	1	

R46-PCB Assy (10/10)
(41033201)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
148		Screw	PSW3-4C	2	





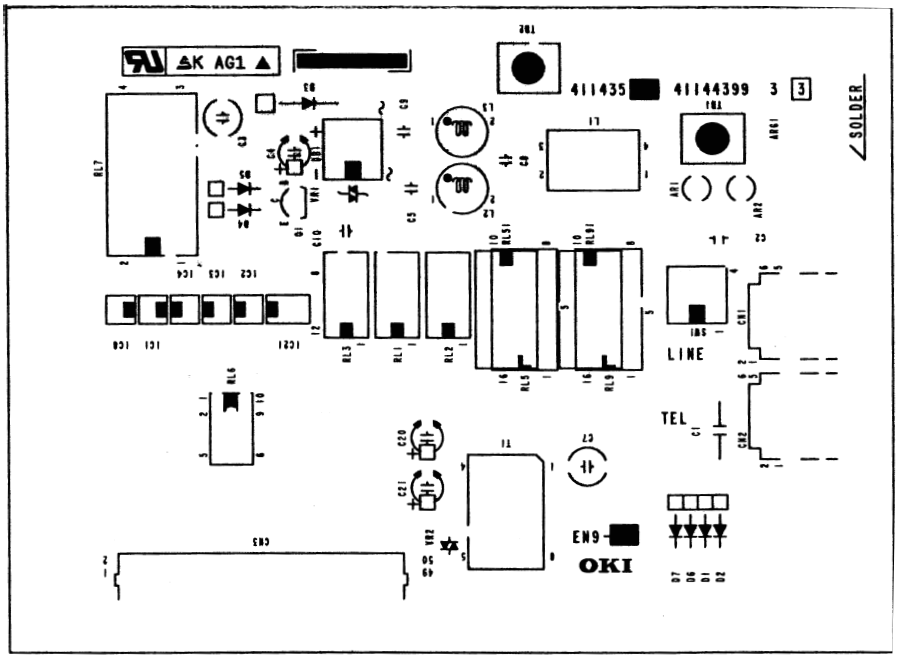
04W-PCB Assy (1/3)
(40071401)

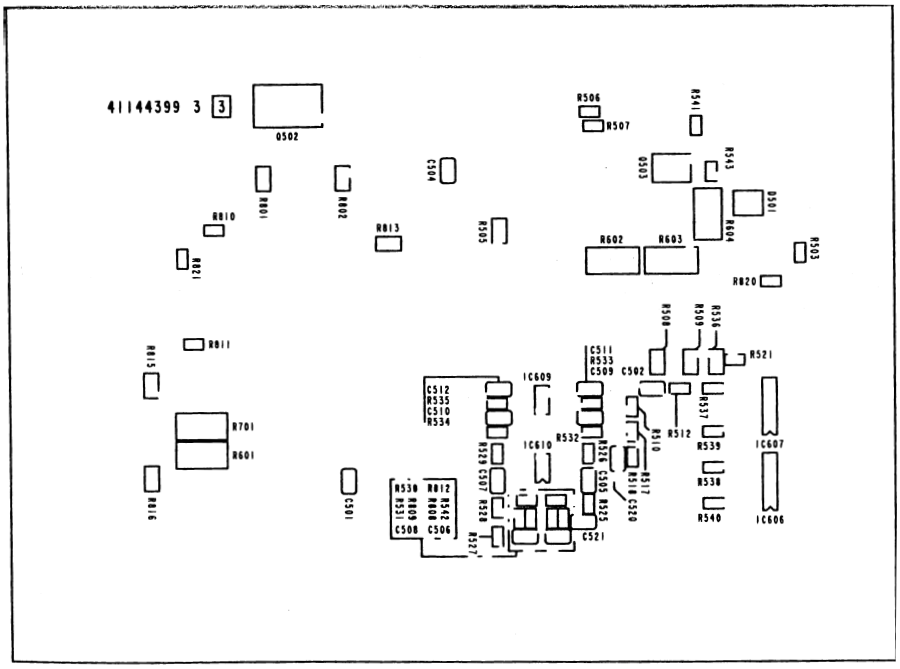
04W-PCB Assy (2/3)
(40071401)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	D1 ~ D8	1S953/1S2075K/1S2473 D-Signal	611A0003L0001	8	
2					
3	L1	GL3HD8 PHOTO-LED	650A0128M0030	1	
4	L2 ~ L7, L9	GL3HY8 PHOTO-LED	650A0228M0010	7	
5					
6	R15	RD1/4Y10ΩJ RES-Carbon fim-	321A1421J0100	1	
7	R22 ~ R25	RD1/4Y100ΩJ RES-Carbon fim-	321A1421J0101	4	
8	R1	RD1/4Y150ΩJ RES-Carbon fim-	321A1421J0151	1	
9	R4 ~ R9, R11	RD1/4Y220ΩJ RES-Carbon fim-	321A1412J0221	7	
10	R32	RD1/4Y1KΩJ RES-Carbon fim-	321A1412J0102	1	
11	R10	RD1/4Y4.7KΩJ RES-Carbon fim-	321A1421J0472	1	
12	R12, R14, R19, R20, R21, R26	RD1/4Y10KΩJ RES-Carbon fim-	321A1421J0103	6	
13	R13, R16 ~ R18, R27	RD1/4Y47KΩJ RES-Carbon fim-	321A1421J0473	5	
14	R28	RD1/4Y470KΩJ RES-Carbon fim-	321A1421J0474	1	
15	R31	RD 1/4Y1.5KΩJ RES-Carbon fim-	321A1421J0152	1	
16	R2	RD1/4Y3.9KΩJ RES-Carbon fim-	321A1421J0392	1	
17					
18	RM1	MRM-8-103JA Block Resistor	334A3268J0103	1	
19					
20	C37, C39	DD104B101K50V CAP-Ceramic -	302A4011K3101	2	

04W-PCB Assy (3/3)
(40071401)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
21	C5, C38	DD104B221K50V 50V CAP-Ceramic -	302A4011K3221	2	
22	C22, C23	CK92C1H471MS 50V CAP-Ceramic -	303A4115M3471	2	
23	C33 ~ C35	RD16XR/CK92C1H102 CAP-Ceramic -P	303A4003M3102	3	
24	C36	CK92C1H472MS 50V CAP-Ceramic -	303A4115M3472	1	
25	C40	50MS5-0.68M 50V CAP-Alum (CE)	304A1046H1688	1	
26	C1	KME25VB-47 25V CAP-Alum (CE)	304A1115E1470	1	
27					
28	IC1	M38002M2-289SP CPU-MOS	8530183M0005	1	
29	IC502	M51957AFP Analog-BIPLIN -S	7200022N0001	1	
30	IC503	74HC08FP Digital IC-MOS -S	702A1703N0008	1	
31	IC504	74HC126FP Digital IC-MOS -S	702A1703N0126	1	
32	IC505	74HC32FP Digital IC-MOS -S	702A1703N0032	1	
33					
34	CN1	S16B-PH-K-S Connector-PCB	224A3531P0160	1	
35					
36	SW1 ~ SW23, SW34, SW35, SW56 ~ SW64	KSM611B Switch-Push -	2051422P1001	34	
37	OSC	CST6.00MGW121 OSC-Ceramic	381A1048B0003	1	
38					
39		SMRJ-B-7/0.16-7X115 CONN PAR -	238A1079P0001	2	
40		LCD Driver Module Specification	YB4134-1026P001	1	





EN9-PCB Assy (1/6)
(41144301)

EN9-PCB Assy (2/6)
(41144301)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	AR1, AR2	SRH412-501MFT ARRESTER- -P	5431004G0501	2	
2					
3	C1	ECQ-E2474KF 250V CAP-Plast flm -	306A2221K5474	1	
4	C3	SME10VB-100BP-0A 10V CAP-Alum(CE) -	304A1122A1101	1	
5	C4	TC04RSME50VB4R7MF50 CAP-Alum(CE) -P	3041010H1479	1	
6	C5, C9	ECQB1473JF3 100V CAP-Plast flm -P	3062002J2473	2	
7	C7	UVP2A2R2 100V CAP-Alum(CE) -P	3041203A2229	1	
8	C8	ECQB1223JF3 100V CAP-Plast flm -P	3062002J2223	1	
9	C10	ECQB1153JF3 100V CAP-Plast flm -P	3062002J2153	1	
10	C20, C21	UVX/SME-16V-47uF 16V CAP-Alum(CE) -P	3041003C1470	2	
11	C502	GRM40B124K25 25V CAP-Ceramic -C	3036001K2124	1	
12	C504	CK2012B1H153K 50V CAP-Ceramic -C	303A6008K3153	1	
13	C505	GRM40CH122J50PT 50V CAP-Ceramic -C	3033001C0122	1	
14	C506, C508	CK2012F1E224Z 25V CAP-Ceramic -C	303A6008Z2224	2	
15	C507	CK2012B1H103K 50V CAP-Ceramic -C	303A6008K3103	1	
16	C509	CC2012SL1H561J 50V CAP-Ceramic -C	303A3007K0561	1	
17	C510	CK2012B1H152K 50V CAP-Ceramic -C	303A6008K3152	1	
18	C511	CC2012CH1H471J 50V CAP-Ceramic -C	303A3007C0471	1	
19	C512	CC2012SL1H181J 50V CAP-Ceramic -C	303A3007K0181	1	
20	C520	CK2012B1H472K 50V CAP-Ceramic -C	303A6008K3472	1	

EN9-PCB Assy (3/6)
(41144301)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
21	C521	CK2012B1H102K 50V CAP-Ceramic -C	303A6008K3102	1	
22					
23	CN1, CN2	52830-6625/TM5RE2VX Connector-Plug-	2233003P0001	2	
24	CN3	2-176837-4 Connector-PCB-	224A4335P0500	1	
25					
26	D1, D2	RD20E-B D-Zener -	613A1231L0252	2	
27	D3	RD6.2F-B D-Zener -	613A2232L0132	1	
28	D4	RD5.1E-B2 D-Zener -	613A1231L0112B	1	
29	D5	E-152 D-Zener -	611A0037L0011	1	
30	D6, D7	RD3.9E-B2 D-Zener -	613A1231L0082B	2	
31	D501	SS100MA80VSCP D-Signal -C	611A0000N0003	1	
32					
33	DB1	S1WBA60 D-Rectifying -	610A1027M0002D	1	
34					
35	IC1	PC123YS/TLP621 PHOTO-Coupler-	6520103M0001	1	
36	IC2 ~ IC4	PS2532-1/TLP627 PHOTO-Coupler-	6523103M0003	3	
37	IC8	PS2525-1/TLP320 PHOTO-Coupler-	6520103M0002	1	
38	IC606, IC607	LB1233M-TE-L ARRAY-TR -B	7600031N0701	2	
39	IC609, IC610	NJM4558M Analog-BIPLIN -S	720A0028N0039	2	
40					

EN9-PCB Assy (4/6)
(41144301)

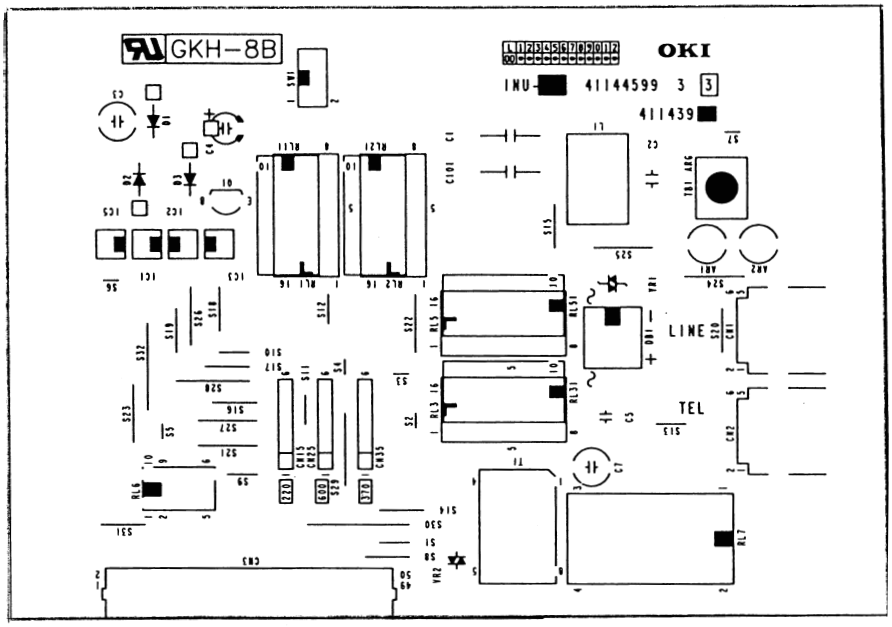
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
41	L2	LHL08TB-682J Coil-HF -P	3531001J0682	1	
42	L3	LHL08TB-222J Coil-HF -P	3531001J0222	1	
43					
44	Q1	2SD1209K TR-NPN/L-FREQ-	603A1121M0010	1	
45	Q502	2SA1727/2SA1700-TL TR-NPN/L-FREQ-C	6001103N0002	1	
46	Q503	2SA1384-0(TE12L,C) TR-NPN/L-FREQ-C	6001025N0002	1	
47					
48	R503	CR/RK73K/ERJ/MCRJ152 RES-MET RN -C	3235003J0152	1	
49	R505	RM73B2A303J RES-MET RN -C	323A5003J0303	1	
50	R506	CR/RK73K/ERJ/MCRJ243 RES-MET RN -C	3235003J0243	1	
51	R507	CR/RK73K/ERJ/MCRJ363 RES-MET RN -C	3235003J0363	1	
52	R508, R509, R536	RM73B2A271J RES-MET RN -C	323A5003J0271	3	
53	R510	CR/RK73K/ERJ/MCRJ271 RES-MET RN -C	3235003J0271	1	
54	R512	CR/RK73K/ERJ/MCRJ751 RES-MET RN -C	3235003J0751	1	
55	R517	CR/RK73K/ERJ/MCRJ562 RES-MET RN -C	3235003J0562	1	
56	R518	CR/RK73K/ERJ/MCRJ123 RES-MET RN -C	3235003J0123	1	
57	R521	CR/RK73K/ERJ/MCRJ393 RES-MET RN -C	3235003J0393	1	
58	R525	CR/RK73K/ERJ/MCRJ203 RES-MET RN -C	3235003J0203	1	
59	R526	CR/RK73K/ERJ/MCRJ512 RES-MET RN -C	3235003J0512	1	
60	R528	CR/RK73K/ERJ/MCRJ103 RES-MET RN -C	3235003J0103	1	

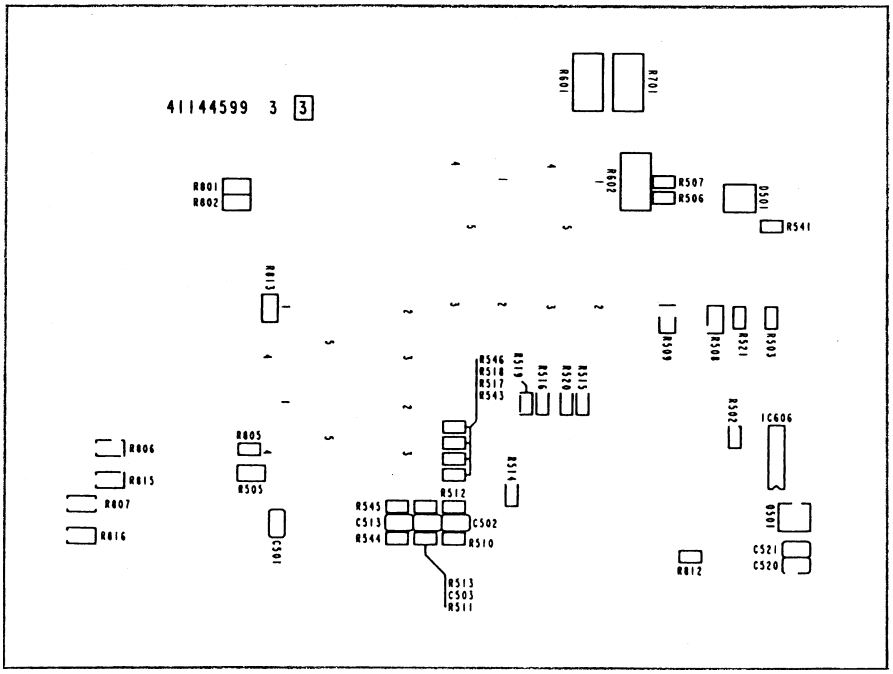
EN9-PCB Assy (5/6)
(41144301)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
61	R529	CR/RK73K/ERJ/MCRJ104 RES-MET RN -C	3235003J0104	1	
62	R531	CR/RK73K/ERJ/MCRJ102 RES-MET RN -C	3235003J0102	1	
63	R532 ~ R535	CR/RK73K/ERJ/MCRJ683 RES-MET RN -C	3235003J0683	4	
64	R537 ~ R540	CR/RK73K/ERJ/MCRJ472 RES-MET RN -C	3235003J0472	4	
65	R542	CR/RK73K/ERJ/MCRJ183 RES-MET RN -C	3235003J0183	1	
66	R543	CR/RK73K/ERJ/MCRJ105 RES-MET RN -C	3235003J0105	1	
67	R601	MCR100JZH J303 RES-MET RN -C	3235040J0303	1	
68	R602	MCR100JZH J5R1 RES-MET RN -C	3235040J0519	1	
69	R603	MCR100JZH J430 RES-MET RN -C	3235040J0430	1	
70	R604	MCR100JZH J220 RES-MET RN -C	3235040J0220	1	
71	R701	MCR100JZH J680 RES-MET RN -C	3235040J0680	1	
72	R801, R802, R815, R816	2125JPW RES-MET RN -C	323A5003P0001	4	
73					
74	RL1 ~ RL3	BA-5W-K/ATXD209 Relay-General -	2601003P1000	3	
75	RL5, RL9	AJQ1349 Relay-General -	2601009P1000	2	
76	RL6	AHY109/SY-5W-K Relay-General -	2601103P1000	1	
77					
78	SW1	BS4-01 Switch-DIP -	206A1100P0400	1	
79					
80	T1	SR-422 TFORMER-LF -	3613000P0001	1	

EN9-PCB Assy (6/6)
(41144301)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
81					
82	TB1	P-97 CONN PAR- -	230A6021P0002	1	
83					
84	VR1	ERZV10D680 SEMICO-Vari -	6320229M0025	1	
85	VR2	ERZV07D220 SEMICO-Vari -	6320229M0011	1	
86					
87	JP1		LY-6314-1-GN	1	L=10mm





INU-PCB Assy
(41144501)-US (1/4)
(41144502)-INT (1/5)

INU-PCB Assy (2/4)
(41144501)-US

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	AR1, AR2	SRH412-501MFT ARRESTER- -P	5431004G0501	2	
2					
3	C1	ECQ-E2474KF 250V CAP-Plast flm -	306A2221K5474	1	
4	C3	SME10VB-100BP-0A 10V CAP-Alum(CE) -	304A1122A1101	1	
5	C4	UVR1H2R2 50V CAP-Alum(CE) -P	3041003H1229	1	
6	C5	ECQB1473JF3 100V CAP-Plast flm -P	3062002J2473	1	
7	C7	UVP2A2R2 100V CAP-Alum(CE) -P	3041203A2229	1	
8	C501	CK2012R1H223K 50V CAP-Ceramic -C	303A6008K3223	1	
9					
10	CN1, CN2	52830-6625/TM5RE2VX Connector-Plug -	2233003P0001	2	
11	CN3	2-176837-4 Connector-PCB -	224A4335P0500	1	
12					
13	D1, D2	RD20E-B D-Zener -	613A1231L0252	2	
14	D3	RD12E-B2 D-Zener -	613A1231L0202B	1	
15	D501	SS100MA80VSCP D-Signal -C	611A0000N0003	1	
16					
17	DB1	S1WBA60 D-Rectifying -	610A1027M0002D	1	
18					
19	IC1	PC123YS/TLP621 PHOTO-Coupler -	6520103M0001	1	
20	IC2, IC3	PS2532-1/TLP627 PHOTO-Coupler -	6523103M0003	2	

INU-PCB Assy (3/4)
(41144501)-US

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
21	IC5	PS2525-1/TLP320 PHOTO-Coupler -	6520103M0002	1	
22	IC606	LB1233M-TE-L ARRAY-TR -B	7600031N0701	1	
23					
24	Q1	2SD1209K TR-NPN/L-FREQ -	603A1121M0010	1	
25	Q501	DTC323TK/RN1444-B TR-NPN/H-FREQ -C	6021003N0003	1	
26					
27	R502	CR/RK73K/ERJ/MCRJ222 RES-MET RN -C	3235003J0222	1	
28	R503	CR/RK73K/ERJ/MCRJ152 RES-MET RN -C	3235003J0152	1	
29	R505	RM73B2A303J RES-MET RN -C	323A5003J0303	1	
30	R506, R521	CR/RK73K/ERJ/MCRJ203 RES-MET RN -C	3235003J0203	2	
31	R507	CR/RK73K/ERJ/MCRJ363 RES-MET RN -C	3235003J0363	1	
32	R508, R509	RM73B2A271J RES-MET RN -C	323A5003J0271	2	
33	R511	CR/RK73H/ERJ/MCRF301 RES-MET RN -C	3235003F0301	1	
34	R514	CR/RK73H/ERJ/MCRF201 RES-MET RN -C	3235003F0201	1	
35	R517	CR/RK73H/ERJ/MCRF752 RES-MET RN -C	3235003F0752	1	
36	R518	CR/RK73H/ERJ/MCRF133 RES-MET RN -C	3235003F0133	1	
37	R601	MCR100JZH J303 RES-MET RN -C	3235040J0303	1	
38	R602	MCR100JZH J680 RES-MET RN -C	3235040J0680	1	
39	R801, R802, R815, R816	2125JPW RES-MET RN -C	323A5003P0001	4	
40					

INU-PCB Assy (4/4)
(41144501)-US

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
41	RL1 ~ RL3, RL5	AJQ1349 Relay-General -	2601009P1000	4	
42	RL6	AHY109/SY-5W-K Relay-General -	2601103P1000	1	
43					
44	T1	SR-422 TFORMER-LF -	3613000P0001	1	
45					
46	TB1	P-97 CONN PAR- -	230A6021P0002	1	
47					
48	VR1	ERZV10D680 SEMICO-Vari -	6320229M0025	1	
49	VR2	ERZV07D220 SEMICO-Vari -	6320229M0011	1	
50					
51	S1 ~ S32	SHORT WIRE	TA-0.6	32	L=55mm

INU-PCB Assy (2/5)
(41144502)-INT

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	AR1, AR2	SRH412-501MFT ARRESTER- -P	5431004G0501	2	
2					
3	C1, C101	ECQ-E2474KF 250V CAP-Plast flm -	306A2221K5474	2	
4	C3	SME10VB-100BP-0A 10V CAP-Alum(CE) -	304A1122A1101	1	
5	C4	UVR1H2R2 50V CAP-Alum(CE) -P	3041003H1229	1	
6	C5	ECQB1473JF3 100V CAP-Plast flm -P	3062002J2473	1	
7	C7	UVP2A2R2 100V CAP-Alum(CE) -P	3041203A2229	1	
8	C501	CK2012R1H223K 50V CAP-Ceramic -C	303A6008K3223	1	
9	C502	GRM40B683K50 50V CAP-Ceramic -C	3036001K3683	1	
10	C513	GRM40B154K25 25V CAP-Ceramic -C	3036001K2154	1	
11					
12	CN1, CN2	52830-6625/TM5RE2VX Connector-Plug -	2233003P0001	2	
13	CN3	2-176837-4 Connector-PCB -	224A4335P0500	1	
14	CN15, CN25, CN35	IMSA9202B-1-06Z013GF Connector-PCB -	224A4082P0060	3	
15					
16	D1, D2	RD20E-B D-Zener -	613A1231L0252	2	
17	D3	RD12E-B2 D-Zener -	613A1231L0202B	1	
18	D501	SS100MA80VSCP D-Signal -C	611A0000N0003	1	
19					
20	DB1	S1WBA60 D-Rectifying -	610A1027M0002D	1	

INU-PCB Assy (3/5)
(41144502)-INT

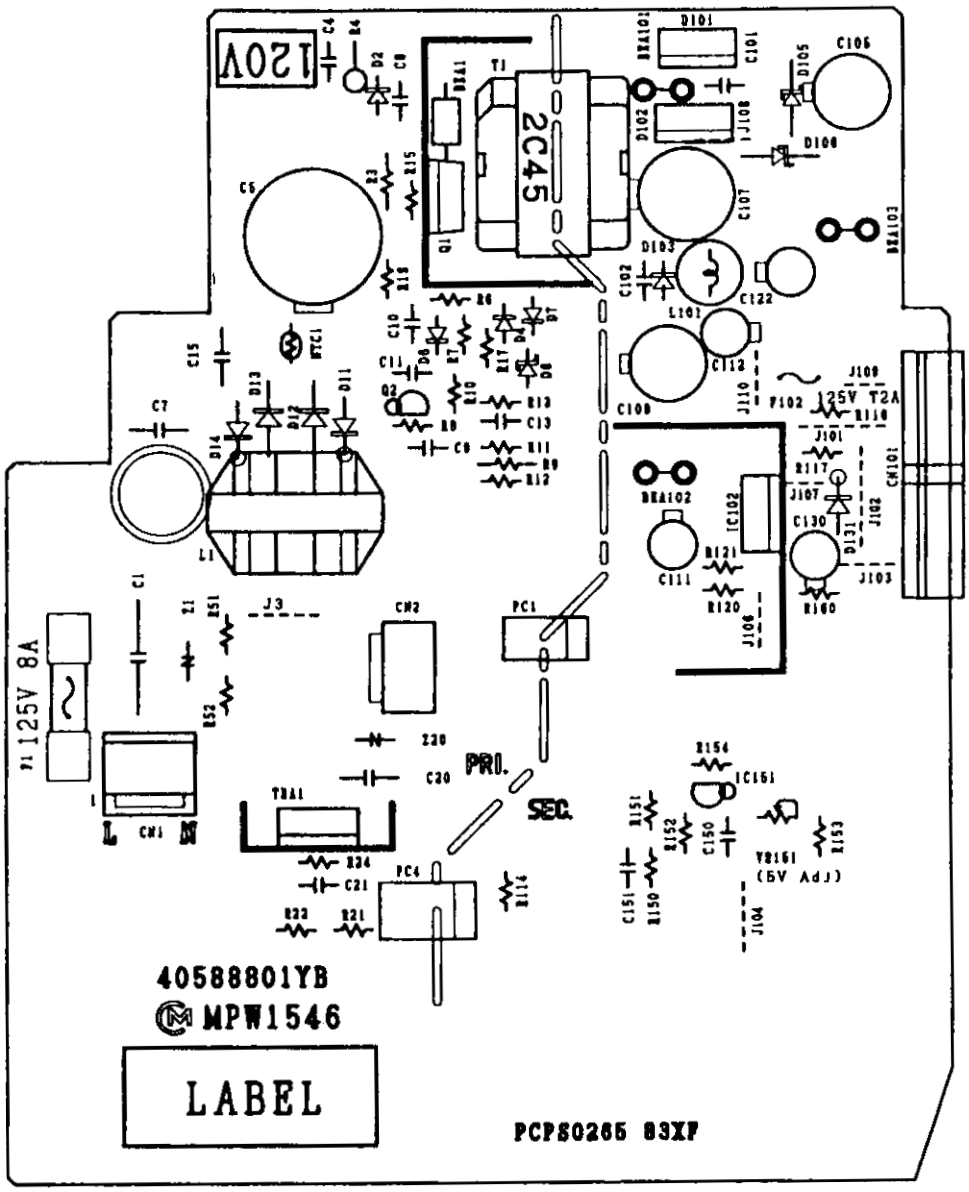
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
21					
22	IC1	PC123YS/TLP621 PHOTO-Coupler -	6520103M0001	1	
23	IC2, IC3	PS2532-1/TLP627 PHOTO-Coupler -	6523103M0003	2	
24	IC5	PS2525-1/TLP320 PHOTO-Coupler -	6520103M0002	1	
25	IC606	LB1233M-TE-L ARRAY-TR -B	7600031N0701	1	
26					
27	Q1	2SD1209K TR-NPN/L-FREQ -	603A1121M0010	1	
28	Q501	DTC323TK/RN1444-B TR-NPN/H-FREQ -C	6021003N0003	1	
29					
30	R502	CR/RK73K/ERJ/MCRJ222 RES-MET RN -C	3235003J0222	1	
31	R503	CR/RK73K/ERJ/MCRJ152 RES-MET RN -C	3235003J0152	1	
32	R505	RM73B2A303J RES-MET RN -C	323A5003J0303	1	
33	R506, R521	CR/RK73K/ERJ/MCRJ203 RES-MET RN -C	3235003J0203	2	
34	R507	CR/RK73K/ERJ/MCRJ363 RES-MET RN -C	3235003J0363	1	
35	R508, R509	RM73B2A271J RES-MET RN -C	323A5003J0271	2	
36	R510	CR/RK73H/ERJ/MCRF201 RES-MET RN -C	3235003F0201	1	
37	R511, R513	CR/RK73H/ERJ/MCRF301 RES-MET RN -C	3235003F0301	2	
38	R512	CR/RK73H/ERJ/MCRF112 RES-MET RN -C	3235003F0112	1	
39	R515, R543	CR/RK73H/ERJ/MCRF682 RES-MET RN -C	3235003F0682	2	
40	R516	CR/RK73H/ERJ/MCRF752 RES-MET RN -C	3235003F0752	1	

INU-PCB Assy (4/5)
(41144502)-INT

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
41	R519	CR/RK73H/ERJ/MCRF153 RES-MET RN -C	3235003F0153	1	
42	R520	CR/RK73H/ERJ/MCRF223 RES-MET RN -C	3235003F0223	1	
43	R544	CR/RK73H/ERJ/MCRF271 RES-MET RN -C	3235003F0271	1	
44	R545	CR/RK73H/ERJ/MCRF681 RES-MET RN -C	3235003F0681	1	
45	R546	CR/RK73H/ERJ/MCRF183 RES-MET RN -C	3235003F0183	1	
46	R601	MCR100JZH J303 RES-MET RN -C	3235040J0303	1	
47	R602	MCR100JZH J430 RES-MET RN -C	3235040J0430	1	
48	R701	MCR100JZH J103 RES-MET RN -C	3235040J0103	1	
49	R801, R802, R815, R816	2125JPW RES-MET RN -C	323A5003P0001	4	
50					
51	RL1 ~ RL3, RL5	AJQ1349 Relay-General -	2601009P1000	4	
52	RL6	AHY109/SY-5W-K Relay-General -	2601103P1000	1	
53					
54	SW1	BS2-01 Switch-DIP	206A1100P0200	1	
55					
56	T1	SR-422 TFORMER-LF -	3613000P0001	1	
57					
58	TB1	P-97 CONN PAR- -	230A6021P0002	1	
59					
60	VR1	ERZV10D680 SEMICO-Vari -	6320229M0025	1	

INU-PCB Assy (5/5)
(41144502)-INT

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
61	VR2	ERZV07D220 SEMICO-Vari -	6320229M0011	1	
62					
63	S1 ~ S32	SHORT WIRE	TA-0.6	32	L=55mm



MPW1546 (120V)-PCB Assy (1/5)
(SIPS1303)

MPW1546 (120V)-PCB Assy (2/5)
(SIPS1303)

REF. NO.	SYMBOL	TYPE/NAME	Q'TY	REMARKS
1	D11 ~ D14, D131	DIODE ERA15-06	5	FUJI ELECTRIC CO., LTD.
2	D101	DIODE YG911S2	1	FUJI ELECTRIC CO., LTD.
3	D102	DIODE YG811S06R	1	FUJI ELECTRIC CO., LTD.
4	D4, D7	DIODE 1SS133	2	ROHM CO., LTD.
5	D103	DIODE ERA22-06	1	FUJI ELECTRIC CO., LTD.
6	D105, D106	ZENER DIODE HZ-24	2	HITACHI LTD.
7	D8	ZENER DIODE HZS9	1	HITACHI LTD.
8	D2, D6			NOT MOUNTED
9				
10	TRA1	TRIODE SEMICONDUCTOR SWITCH SM12JZ47	1	TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components
11				
12	Q2	TRANSISTOR 2SC1741AS	1	ROHM CO., LTD. OPERATIONS-Electronic Components
13	Q1	FET 2SK2972	1	TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components
14				
15	IC102	INTEGRATED CIRCUIT TA78M24S	1	TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components
16	IC151	INTEGRATED CIRCUIT TA76431S	1	TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components
17				
18	PC4	OPTICAL ISOLATER TLP561G	1	TOSHIBA CORP. INTERNATIONAL
19	PC1	OPTICAL ISOLATER PC817	1	SHARP Corp. Electronic Components Group OPERATIONS-Electronic Components
20				

MPW1546 (120V)-PCB Assy (3/5)
(SIPS1303)

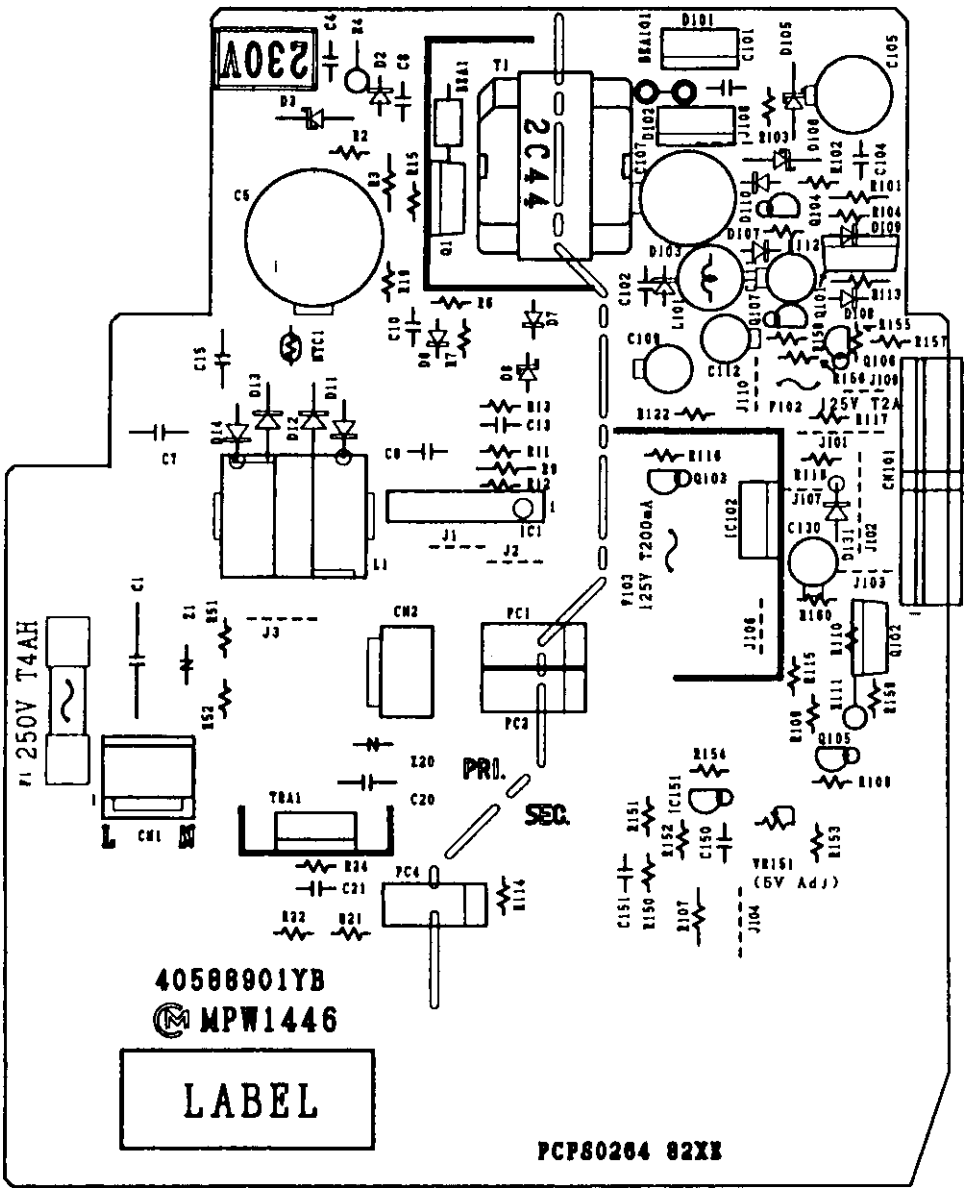
REF. NO.	SYMBOL	TYPE/NAME	Q'TY	REMARKS
21	Z1	TRANSIENT VOLTAGE EN241 SURGE SUPPRESSOR	1	FUJI ELECTRIC CO., LTD.
22	Z20			NOT MOUNTED
23				
24	NTC1	NTC THERMISTOR NTH7D4R0	1	MURATA MFG CO., LTD.
25				
26	R19	RESISTOR 1/4W 10Ω	1	
27	R21	RESISTOR 1/4W 22Ω	1	
28	R9	RESISTOR 1/4W 68Ω	1	
29	R24	RESISTOR 1/4W 150Ω	1	
30	R114, R150	RESISTOR 1/4W 220Ω	2	
31	R6	RESISTOR 1/4W 330Ω	1	
32	R17	RESISTOR 1/4W 820Ω	1	
33	R151	RESISTOR 1/4W 1KΩ	1	
34	R120	RESISTOR 1/4W 1.8Ω	1	
35	R10	RESISTOR 1/4W 3.9KΩ	1	
36	R152	RESISTOR 1/4W 4.7KΩ	1	
37	R11	RESISTOR 1/4W 5.6KΩ	1	
38	R153	RESISTOR 1/4W 6.8KΩ	1	
39	R154	RESISTOR 1/4W 8.2KΩ	1	
40	R117, R118	RESISTOR 1/4W 15KΩ	2	

MPW1546 (120V)-PCB Assy (4/5)
(SIPS1303)

REF. NO.	SYMBOL	TYPE/NAME	Q'TY	REMARKS
41	R13	RESISTOR 1/4W 18KΩ	1	
42	R15	RESISTOR 1/4W 22KΩ	1	
43	R8	RESISTOR 1/4W 33KΩ	1	
44	R3	RESISTOR 1/4W 390KΩ	1	
45	R22	RESISTOR 1/6W 10Ω	1	
46	R4, R7, R12, R51, R52, R121, R160			NOT MOUNTED
47				
48	VR151	RESISTOR 1/10W 5KΩ	1	
49				
50	C11, C13	CERAMIC CAPACITOR 50V 100pF	2	MURATA MFG. CO., LTD.
51	C150	CERAMIC CAPACITOR 50V 0.1μF	1	MURATA MFG. CO., LTD.
52	C8	CERAMIC CAPACITOR 1KV 220pF	1	MURATA MFG. CO., LTD.
53	C7	CERAMIC CAPACITOR VA3 10000pF	1	MURATA MFG. CO., LTD.
54	C1	FILM CAPACITOR AC250V 0.1μF (RE)	1	OKAYA ELECTRIC INDUSTRIES CO., LTD.
55	C9, C10	FILM CAPACITOR 50V 4700pF	2	
56	C112, C130	ELECTROLYTIC CAPACITOR 35V 82μF	2	
57	C109	ELECTROLYTIC CAPACITOR 35V 220μF	1	
58	C107	ELECTROLYTIC CAPACITOR 35V 560μF	1	
59	C122	ELECTROLYTIC CAPACITOR 50V 56μF	1	
60	C105	ELECTROLYTIC CAPACITOR 50V 180μF	1	

MPW1546 (120V)-PCB Assy (5/5)
(SIPS1303)

REF. NO.	SYMBOL	TYPE/NAME	Q'TY	REMARKS
61	C5	ELECTROLYTIC CAPACITOR 200V 220µF	1	
62	C4, C15, C20, C21, C101, C102, C122, C151			NOT MOUNTED
63				
64	L1	INDUCOTR ELF15N006	1	MATSUSHITA ELECTRIC INDUSTRIAL CO.,LTD
65	L101	INDUCOTR 150S	1	MURATA MFG. CO., LTD.
66				
67	T1	TRANSFORMER 2C45	1	MURATA MFG. CO., LTD.
68				
69	BEA1	FERRITE BEADS	1	MURATA MFG. CO., LTD.
70	BEA102, BEA103	FERRITE BEADS	2	MURATA MFG. CO., LTD.
71	BEA101			NOT MOUNTED
72				
73	F1	FUSE AC125V 8.0A (237)	1	LITTELFUSE INC.
74	F102			NOT MOUNTED
75				
76	CN1	CONNECTOR 5277-02A	1	MOLEX INC.
77	CN101	CONNECTOR S12B-XH-A-1	1	JAPAN SOLDERLESS TERMINAL MFG. CO., LTD.
78	CN2	CONNECTOR B2P3-VH	1	JAPAN SOLDERLESS TERMINAL MFG. CO., LTD.



MPW1446 (230V)-PCB Assy (1/6)
(SIPS1302)

MPW1446 (230V)-PCB Assy (2/6)
(SIPS1302)

REF. NO.	SYMBOL	TYPE/NAME	Q'TY	REMARKS
1	C11 ~ C14, C131	DIODE ERA15-06	5	FUJI ELECTRIC CO., LTD.
2	D102	DIODE YG811S06R	1	FUJI ELECTRIC CO., LTD.
3	D101	DIODE YG911S2R	1	FUJI ELECTRIC CO., LTD.
4	D6, D7, D107 ~ D110	DIODE 1SS133	6	ROHM CO., LTD.
5	D103	DIODE ERA22-06	1	FUJI ELECTRIC CO., LTD.
6	D105, D106	ZENER DIODE HZ-24	2	HITACHI LTD.
7	D8	ZENER DIODE HZS9	1	HITACHI LTD.
8	D3	ZENER DIODE RD120	1	HITACHI LTD.
9	D2			NOT MOUNTED
10				
11	TRA1	TRIODE SEMICONDUCTOR SWITCH SM12JZ47	1	TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components
12				
13	Q101	TRANSISTOR 2SJ303	1	ROHM CO., LTD.
14	Q102	TRANSISTOR 2SA1757	1	ROHM CO., LTD.
15	Q105, Q106	TRANSISTOR 2SA933S	2	ROHM CO., LTD.
16	Q104, Q107	TRANSISTOR 2SC1740S	2	ROHM CO., LTD.
17	Q103	TRANSISTOR 2SD1858	1	ROHM CO., LTD.
18	Q1	FET 2SK2717	1	TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components
19				
20	IC102	INTEGRATED CIRCUIT TA78M24S	1	TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components

MPW1446 (230V)-PCB Assy (3/6)
(SIPS1302)

REF. NO.	SYMBOL	TYPE/NAME	Q'TY	REMARKS
21	IC151	INTEGRATED CIRCUIT TA76431	1	TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components
22	IC1	INTEGRATED CIRCUIT H8D2877	1	MURATA MFG CO., LTD.
23				
24	PC1, PC2	OPTICAL ISOLATER PC123	2	SHARP Corp. Electronic Components Group
25	PC4	OPTICAL ISOLATER S21ME6	1	SHARP Corp. Electronic Components Group
26				
27	Z1	TRANSIENT VOLTAGE ENC471 SURGE SUPPRESSOR	1	FUJI ELECTRIC CO., LTD.
28				
29	NTC1	NTC THERMISTOR NTH7D8R0	1	MURATA MFG CO., LTD.
30				
31	R19	RESISTOR 1/4W 10Ω	1	
32	R21	RESISTOR 1/4W 22Ω	1	
33	R9	RESISTOR 1/4W 68Ω	1	
34	R111, R159	RESISTOR 1/4W 100Ω	2	
35	R24	RESISTOR 1/4W 150Ω	1	
36	R114, R150	RESISTOR 1/4W 220Ω	2	
37	R6	RESISTOR 1/4W 270Ω	1	
38	R7	RESISTOR 1/4W 330Ω	1	
39	R151	RESISTOR 1/4W 1KΩ	1	
40	R113, R115	RESISTOR 1/4W 2.2KΩ	2	

MPW1446 (230V)-PCB Assy (4/6)
(SIPS1302)

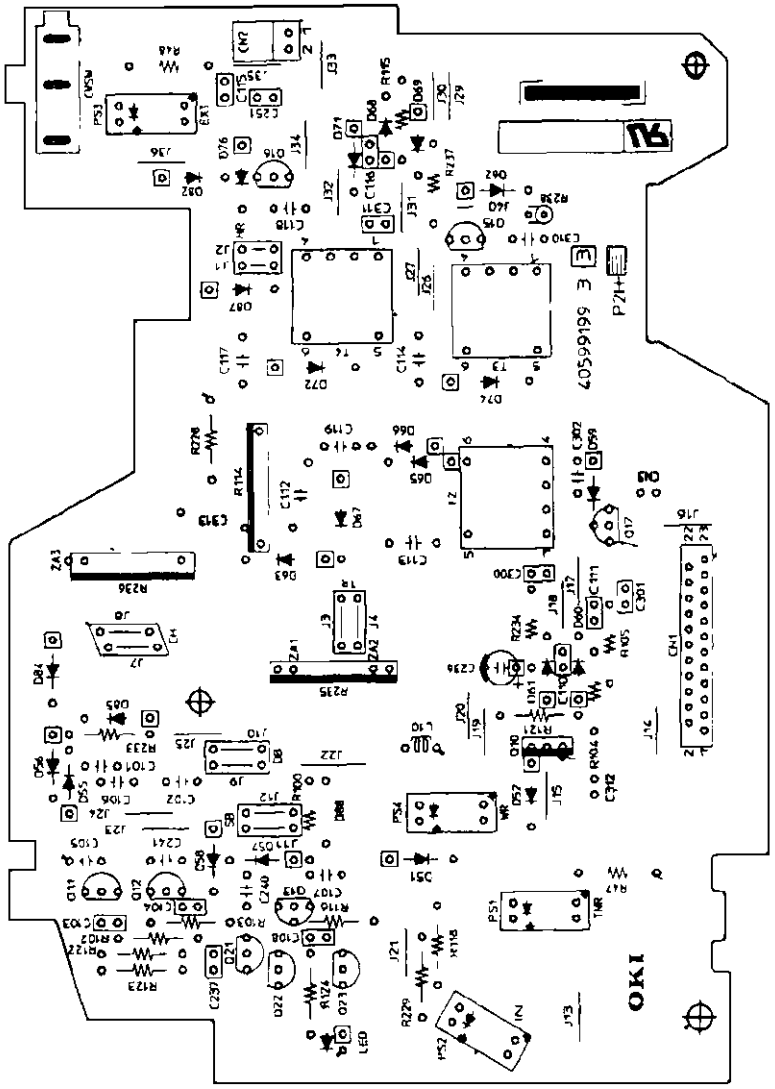
REF. NO.	SYMBOL	TYPE/NAME	Q'TY	REMARKS
41	R107	RESISTOR 1/4W 3.3KΩ	1	
42	R101, R109, R152, R155 ~ R158	RESISTOR 1/4W 4.7KΩ	7	
43				
44	R102, R153	RESISTOR 1/4W 6.8KΩ	2	
45	R154	RESISTOR 1/4W 8.2KΩ	1	
46	R108, R110, R116	RESISTOR 1/4W 10KΩ	3	
47	R11, R12	RESISTOR 1/4W 12KΩ	2	
48				
49	R117, R118	RESISTOR 1/4W 15KΩ	2	
50	R13	RESISTOR 1/4W 47KΩ	1	
51	R15	RESISTOR 1/4W 22KΩ	1	
52	R122	RESISTOR 1/4W 100KΩ	1	
53	R103	RESISTOR 1/4W 220KΩ	1	
54	R3	RESISTOR 1/4W 750KΩ	1	
55	R104	RESISTOR 1/4W 1MΩ	1	
56	R2, R51, R52	RESISTOR 1/4W 2.2MΩ	3	
57	R22	RESISTOR 1/6W 10Ω	1	
58	R4, R12, R112, R160			NOT MOUNTED
59				
60	VR151	RESISTOR 1/10W 5KΩ	1	

MPW1446 (230V)-PCB Assy (5/6)
(SIPS1302)

REF. NO.	SYMBOL	TYPE/NAME	Q'TY	REMARKS
61				
62	C9, C13	CERAMIC CAPACITOR 50V 100pF	2	MURATA MFG CO., LTD.
63	C104, C150	CERAMIC CAPACITOR 50V 0.1µF	2	MURATA MFG CO., LTD.
64	C7, C15	CERAMIC CAPACITOR VA3 3300pF	2	MURATA MFG CO., LTD.
65	C8	CERAMIC CAPACITOR 2KV 47pF	1	MURATA MFG CO., LTD.
66	C1	FILM CAPACITOR AC275V 0.22µF (RE)	1	OKAYA ELECTRIC INDUSTRIES CO., LTD.
67	C10	FILM CAPACITOR 50V 0.01µF	1	
68	C107	ELECTROLYTIC CAPACITOR 35V 560µF	1	
69	C111, C130	ELECTROLYTIC CAPACITOR 35V 82µF	2	
70	C109	ELECTROLYTIC CAPACITOR 35V 220µF	1	
71	C105	ELECTROLYTIC CAPACITOR 50V 180µF	1	
72	C5	ELECTROLYTIC CAPACITOR 400V 68µF	1	
73	C4, C20, C21, C101, C102, C112, C151			NOT MOUNTED
74				
75	L1	INDUCOTR ELF18D290C	1	MATSUSHITA ELECTRIC INDUSTRIAL CO.,LTD
76	L101	INDUCOTR 150S	1	MURATA MFG. CO., LTD.
77				
78	T1	TRANSFORMER 2C44	1	MURATA MFG. CO., LTD.
79				
80	BEA1	FERRITE BEADS	1	MURATA MFG. CO., LTD.

MPW1446 (230V)-PCB Assy (6/6)
(SIPS1302)

REF. NO.	SYMBOL	TYPE/NAME	Q'TY	REMARKS
81	BEA101	FERRITE BEADS	1	MURATA MFG. CO., LTD.
82				
83	F102	FUSE AC125V 2.0A (19396)	1	WICKMANN-WERKE GMBH
84	F103	FUSE AC250V 0.2A (19396)	1	WICKMANN-WERKE GMBH
85	F1	FUSE AC250V T4.0AH (215)	1	LITTELFUSE INC.
86				
87	CN1	CONNECTOR 5277-02A	1	MOLEX INC.
88	CN101	CONNECTOR S12B-XH-A-1	1	JAPAN SOLDERLESS TERMINAL MFG. CO., LTD.
89	CN2	CONNECTOR B2P3-VH	1	JAPAN SOLDERLESS TERMINAL MFG. CO., LTD.



P2H-PCB Assy (1/4)
(40599101)

P2H-PCB Assy (2/4)
(40599101)

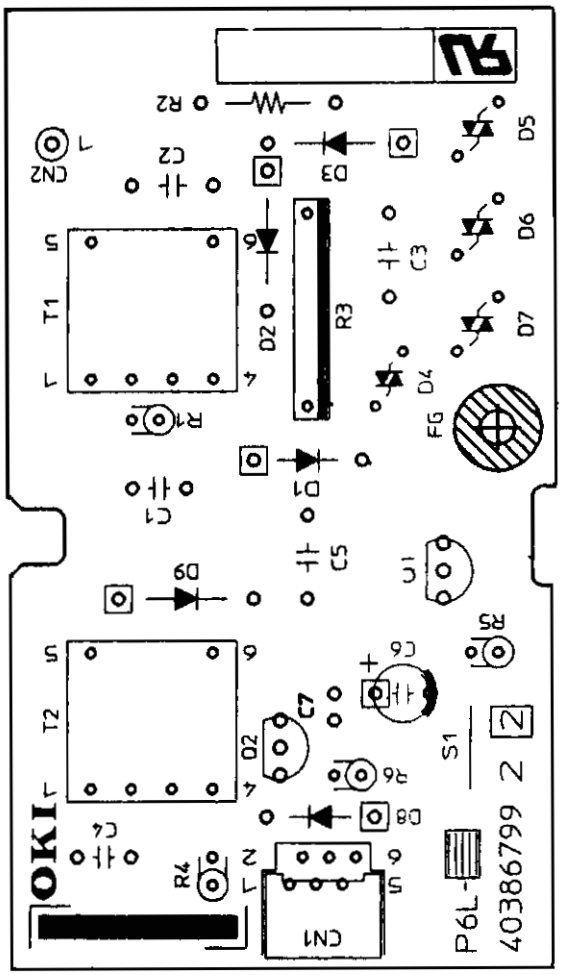
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	D60, D61, D68, D69	1S953/1S2075K/1S2473 D-Signal -	611A0003L0001	4	
2	D63, D67, D72, D74	OR-DHM/ESJA/SHV-06	40681301	4	
3	D51, D55 ~ D59, D62, D71, D84	EU02A/RL105F-F D-Rectifying -Q	6100003M0001	9	
4	D52	1ZB300-Y-Z D-Zener -	613A2003M0001	1	
5	D65, D66	1ZB390 D-Zener -	613A2258M0350	2	
6	D76	RD22E-B2 D-Zener -	613A1231L0262B	1	
7	D82	RD27E-B1 D-Zener -	613A1231L0282A	1	
8	D87	RD200E-B D-Zener -	613A1231L0522	1	
9	D85	1ZB270-Y/Z (TPA2) D-Zener -Q	6132003M0001	1	
10					
11	R234	RD1/4Y33ΩJ RES-Carbon flm -	321A1421J0330	01 1	
12	R47, R48	RD1/4Y130ΩJ RES-Carbon flm -	321A1421J0131	2	
13	R102, R116, R121	RD1/4Y330ΩJ RES-Carbon flm -	321A1421J0331	3	
14	R103, R123	RD1/4Y1KΩJ RES-Carbon flm -	321A1421J0102	2	
15	R118	RD1/4Y4.7KΩJ RES-Carbon flm -	321A1421J0472	1	
16	R122, R124, R229	RD1/4Y5.1KΩJ RES-Carbon flm -	321A1421J0512	3	
17	R105	RD1/4Y24KΩJ RES-Carbon flm -	321A1421J0243	1	
18	R104	RD1/4Y75KΩJ RES-Carbon flm -	321A1421J0753	1	
19	R235	MRH30MK/HV-22-30MK RES-MET solid -	3263103K0306	1	
20	R228, R233	RD1/4Y1MΩJ RES-Carbon flm -	321A1421J0105	2	

P2H-PCB Assy (3/4)
(40599101)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
21	R100	RD1/4Y3MΩJ RES-Carbon flm -	321A1421J0305	1	
22	R115	RNL1/4C3F576KΩ RES-MET RN -	323A1222F5763	1	
23	R114, R236	MRH100MK/HV-38-100MK RES-MET solid-	3263103K0107	2	
24	R237	RD1/4Y5.1ΩJ RES-Carbon flm -	321A1421J0519	1	
25	R238	RD16UJ1.5KΩ RES-Carbon flm -	3213420J0152	1	
26	C105, C107, C119, C240, C241	HNY5P/DE07-1KV-471K CAP-Ceramic -P	3024003K7471	5	
27	C113, C114, C117	DE07/HCYB3F471 CAP-Ceramic -Z	3024203K2471	3	
28	C112	DE1010B471K6K 6KV CAP-Ceramic -	302A4028K4471	1	
29	C101, C102, C106	HLY5P/DD05-500V-471K CAP-Ceramic -P	3024003K6471	3	
30	C103, C104, C108, C110, C111, C115, C237, C251, C300, C301, C311	MLRD/FK16Y5V1H104Z CAP-Ceramic -N	3034003Z3104	11	
31	C116	MLRD/FK16Y5V1H473Z CAP-Ceramic -N	3034003Z3473	1	
32	C118	MY2A/CQMF/ECQP-103J CAP-Plast flm -P	3064003J2103	1	
33	C302, C310	CQMF/MY2A/ECQP-472J CAP-Plast flm -P	3064003J2472	2	
34	C236	UVX/SME-63V-10μF 63V CAP-Alum (CE)-P	3041003J1100	1	
35					
36	Q11, Q13	BCR1AM-12/MAC97-008 THY-Bi/Dir -	622A0003M0001	2	
37	Q12	CR04AM-12 THY-Gate -	620A0022M0008	1	
38	Q21 ~ Q23	2SC1815-Y TR-NPN/H-FREQ -	602A1025M0006Y	3	
39	Q15 ~ Q17	2SC2235-Y TR-NPN/H-FREQ -	602A1125M0039Y	3	
40	Q10	2SC2752 TR-NPN/H-FREQ -	602A1223M0039	1	

P2H-PCB Assy (4/4)
(40599101)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
41					
42	L10	C-14576/SA-8506183 Coil-Choke -	3502003P0102	1	
43					
44	T2 ~ T4	HIGH VOLTAGE TRANSFORMER	YB4049-7078P003	3	
45					
46	PS1 ~ PS4	RPI-574/#9568 PHOTO-Coupler -	652A0103M0002	4	
47					
48	CVSW	SM05S/SS5GL13 Switch-Micro -	2071003P0001	1	
49					
50	LED	SEL3910D/204AD PHOTO-LED -	6500003M0001	1	
51	CN1	23FE-BT-VK-N Connector-PCB -	224A4134P0230	1	
52	CN2	53254-0210 Connector-PCB	224A4407P0020	1	
53					
54	J1, J2, J40	SHORT WIRE	TA-0.6	3	L=55mm P=5.0
55	J3, J4, J7 ~ J12	SHORT WIRE	TA-0.6	8	L=55mm P=7.5
56	J13 ~ J21, J23 ~ J27, J29 ~ J36	SHORT WIRE	TA-0.6	22	L=55mm P=10.0
57	J22	SHORT WIRE	TA-0.6	1	L=55mm P=12.5



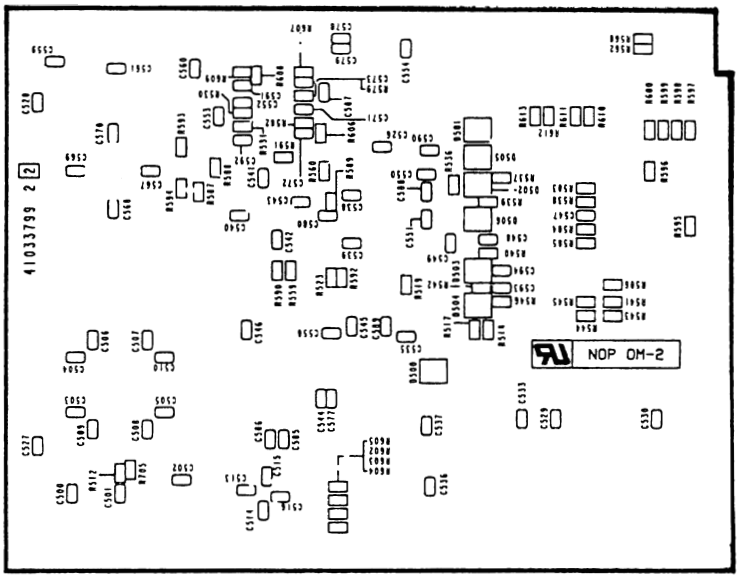
P6L-PCB Assy (1/3)
(40386701)

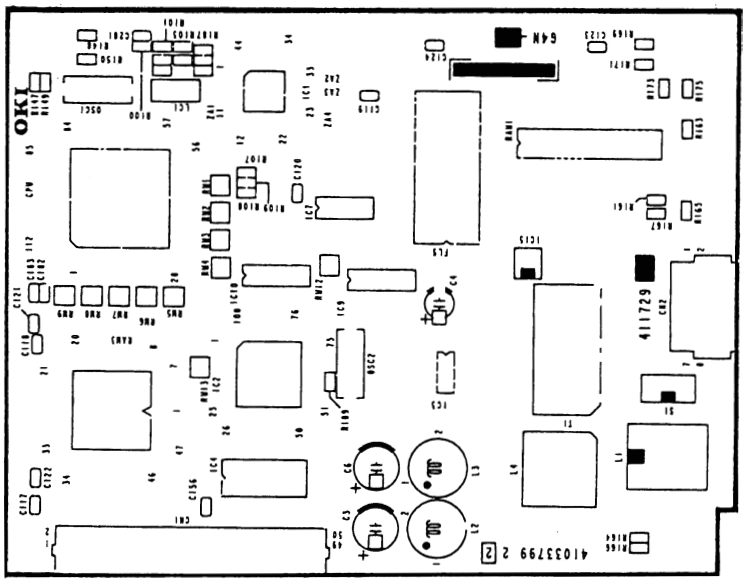
P6L-PCB Assy (2/3)
(40386701)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	D1, D8	EU02A/RL105F-F D-Rectifying -Q	6100003M0001	2	
2	D2, D3, D9	OR-DHM/ESJA/SHV-06	40681301	3	
3	D4	ERZV05D391 SEMICO-Vari -	6320229M0003	1	
4	D5 ~ D7	ERZ/JVR-05N471 SEMICO-Vari -	6320003M0001	3	
5					
6	R1, R4 ~ R6	RD16U/VTJ5.1KΩ RES-Carbon flm -	3213420J0512	4	
7	R2	RD1/4Y1MΩJ RES-Carbon flm -	321A1421J0105	1	
8	R3	MRH100MK/HV-38-100MK RES-MET solid-	3263103K0107	1	
9					
10	C1, C4	MY2A/CQMF-100V-103J CAP-Plast flm -P	3064003J2103	2	
11	C2, C3, C5	DE07/HCYB3F471 CAP-Ceramic -Z	3024203K2471	3	
12	C6	UVX/SME-63V-10μF 63V CAP-Alum (CE)-P	3041003J1100	1	
13					
14	S1	SHORT WIRE	TA-0.6	1	L=55mm P=10.16mm
15					
16	Q1, Q2	2SC2235-Y TR-NPN/H-FREQ	602A1125M0039Y	2	
17					
18	T1, T2	HIGH VOLTAGE TRANSFORMER	YB4049-7078P003	2	
19					
20	CN1	06FE-ST-VK-N Connector-PCB	2244101P0060	1	

P6L-PCB Assy (3/3)
(40386701)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
21	CN2	RT-01T-1.0B Connector-PCB	2247000P0001	1	





G4N-PCB Assy (1/5)
(41033701)

G4N-PCB Assy (2/5)
(41033701)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	CN1	2-176837-4 Connector-PCB -	224A4335P0500	1	
2	CN2	TM5RJ-88 Connector-Plug -	2233010P0001	1	
3					
4	C3, C6	KMG10VB-470M-FC 10V CAP-Alum(CE) -	304A1180A1471	2	
5	C4	UVX/SME25VB-22-0A CAP-Alum(CE) -P	3041103E1220	1	
6	C500, C501	GRM/UMK/MCH/050CH CAP-Ceramic -C 5pF	3033003C0050	2	
7	C538	GRM/UMK/MCH/220CH CAP-Ceramic -C	3033003C0220	1	
8	C539	GRM/UMK/MCH/270CH CAP-Ceramic -C	3033003C0270	1	
9	C593, C594	GRM/UMK/MCH/470CH CAP-Ceramic -C	3033003C0470	2	
10	C182, C183, C281, C577, C580, C585~588	GRM/UMK/MCH/680CH CAP-Ceramic -C	3033003C0680	9	
	C503, C504, C508, C509, C513, C514, C530, C537, C540, C541, C558, C561, C567, C568, C595, C596	GRM/UMK/MCH/102B 50V CAP-Ceramic -C	3036003K0102	16	
11	C571, C592	GRM/UMK/MCH/561B 50V CAP-Ceramic -C	3036003K0561	2	
12	C591	GRM/UMK/MCH/332B 50V CAP-Ceramic -C	3036003K0332	1	
13	C552, C572	GRM/LMK/MCH/105Z 10V CAP-Ceramic -C	3036003Z0105	2	
14	C117~C125, C156, C502, C505~C507, C510, C515, C516, C526~C529, C533, C535, C536, C542~C546, C548~C551, C553, C554, C559, C560, C569, C570, C573, C578, C579, C590, C597	GRM/TMK/MCH/104Z 25V CAP-Ceramic -C	3036003Z0104	44	
15					
16	R582	CR/RK73H/ERJ/MCRF203 RES-MET RN -C	325003F0203	1	

G4N-PCB Assy (3/5)
(41033701)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
17	R579	CR/RK73H/ERJ/MCRF303 RES-MET RN -C	3235003F0303	1	
18	R609	CR/RK73H/ERJ/MCRF622 RES-MET RN -C	3235003F0622	1	
19	R607	CR/RK73H/ERJ/MCRF621 RES-MET RN -C	3235003F0621	1	
20	R593, R594	CR/RK73K/ERJ/MCRJ102 RES-MET RN -C	3235003J0102	2	
21	R189	CR/RK73K/ERJ/MCRJ105 RES-MET RN -C	3235003J0105	1	
22	R589	CR/RK73K/ERJ/MCRJ152 RES-MET RN -C	3235003J0152	1	
23	R102	CR/RK73K/ERJ/MCRJ181 RES-MET RN -C	3235003J0181	1	
24	R608	CR/RK73K/ERJ/MCRJ164 RES-MET RN -C	3235003J0164	1	
25	R100, R101, R103, R104	CR/RK73K/ERJ/MCRJ220 RES-MET RN -C	3235003J0220	4	
26	R531	CR/RK73H/ERJ/MCRF243 RES-MET RN -C	3235003F0243	1	
27	R536	CR/RK73K/ERJ/MCRJ303 RES-MET RN -C	3235003J0303	1	
28	R530	CR/RK73H/ERJ/MCRF513 RES-MET RN -C	3235003F0513	1	
29	R537, R539	CR/RK73K/ERJ/MCRJ300 RES-MET RN -C	3235003J0300	2	
30	R706	CR/RK73K/ERJ/MCRJ393 RES-MET RN -C	3235003J0393	1	
31	R512	CR/RK73K/ERJ/MCRJ471 RES-MET RN -C	3235003J0471	1	
32	R559, R560, R606	CR/RK73K/ERJ/MCRJ472 RES-MET RN -C	3235003J0472	3	
33	R188, R519, R587, R588, R590~R592	CR/RK73K/ERJ/MCRJ473 RES-MET RN -C	3235003J0473	7	
34	R546	CR/RK73K/ERJ/MCRJ623 RES-MET RN -C	3235003J0623	1	
35	R540, R542	CR/RK73K/ERJ/MCRJ822 RES-MET RN -C	3235003J0822	2	

G4N-PCB Assy (4/45)
(41033701)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
36	R107~R109, R147~R150, R161, R163, R165, R167, R169, R171, R173, R175, R187, R208~R215, R523, R583~R586, R597~R600, R602~R605, R705, R707~R718	CR/RK73Z/ERJ/MCRJ-0V RES-0Ω -C	3255003P0001	50	
37					
38	RM1~RM9	CN1J4/EXBV8V22ΩJ RES-Block -C	3345003J0220	9	
39	RM12, RM13	CN1J4/EXBV8V47KΩJ RES-Block -C	3345003J0473	2	
40					
41	D500~D506	SS100MA80VSCP D-Signal -C	611A0000N0003	7	
42	TR1	DTC114EKA TR-NPN/H-FREQ -C	602A1035N0005	1	
43					
44	IC1	LSI2032E-110LT44-D03 Memory-PLA -F	8180338N0003	1	
45	IC2	YTD423D-S CPU-Interface -F	8550846N0001	1	
46	IC3	YTD421B-E Analog-MOSdata -S	7324046N0001	1	
47	IC4	MSM7507-01GS-K Analog-MOSdata -S	7324024N0001	1	
48	IC7	74HC14FP Digital IC-MOS -S	702A1703N0014	1	
49	IC9, IC10	74HC244FP Digital IC-MOS -S	702A1703N0244	2	
50					
51	RAM1	OR-Mrmory-MOSDRAM-S	41087601	1	
52	RAM3	71321LA55J Memory-MOSSRAM -L	8040003N4301	1	
53					
54	FLS	FLASH MEM. IC	41317101	1	

G4N-PCB Assy (5/5)
(41033701)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
55					
56	CPU	HD6437034AE08F CPU-MOS (ROM) -F	8530432N0005	1	
57					
58	OSC1	HC-49/U03C-19.66MHz OSC-Crystal -C	3801001B0002	1	
59	OSC2	HC-49/U03C-12.288MHz OSC-Crystal -C	3801001B0001	1	
60					
61	LC1, LC2	MT-Y223NB COMP PAR-LC -	342A1013N0223	2	
62					
63	T1	PE-65795 TFORMER-Pulse -S	3655000P0001	1	
64					
65	L2, L3	LHL10-102J Coil-HF -	353A1013J0102	2	

APPENDIX F PC-LOADING

1. General

1.1 Application

This specification applies to the OKIFAX4550/OKIOFFICE87, an MFP unit capable of two-way communication using the parallel port as its standard feature.

1.2 General

This specification describes the details of PC loading through the Centro connector provided in the OKIFAX4550/OKIOFFICE87.
The functions covered are for loading by each of default data, flash memory program and language areas, which are equivalent to those of the existing HSLS.
You should download the fill from DOS prompt ; not DOS-window.

1.3 Note on Explanation

The terms used herein shall be interpreted as follows unless specified otherwise.

Term	Explanation
Transfer	Transmission from the PC to the MFP
Receiving	Receiving from the PC to the MFP
Loading data	Data in general that is transferred from the PC to the MFP
Loading program	Program for receiving the data actually loaded to the MFP

1.4 Related Document

FX-046FAX/MFP FACSIMILE TRANSCEIVER PRODUCT SPECIFICATION

2. Basic Operation

2.1 Supported Functions

The PC loading functions described herein are as follows. Functions equivalent to those used in the existing HSLS (High Speed Loading System) are supported.

1. Default data area loading function
2. Language area loading function
3. Flash memory area program loading function

These PC loading functions are supported only when the OS used on the PC side is either MS-DOS Ver. 6.0 or above or PC-DOS Ver. 6.0 or above.

2.2 Differences from HSLS

It must be noted that PC loading through the Centro cable is different in the following points as compared with loading in the HSLS:

(1) While transition to the PC loading process is judged according to the presence/absence of the HSLS board, transition to PC loading is possible by detection of memory error occurrence and manual key operation this time.

(2) The header information is added anew to cope with the addition of the loading program as one of the loading data.

(3) There is no special application in this PC loading unlike the HSLS. Loading is performed by loading data output to the parallel port by means of a binary specification (copy/b).

(4) In the case of the HSLS, returning to normal standby state will not occur so long as the HSLS board is installed. In this system, on the other hand, the normal standby state is set automatically upon detection of the end of loading data by means of the header data.

(5) The cause of the error is displayed by the corresponding code upon occurrence of a hash NG or other error. For the code, see “6. List of Error Causes and Corresponding Codes.”

3. PC Loading Procedure

3.1 PC Loading upon Memory Error Occurrence

3.1.1 Explanation on Procedure

The PC loading procedure when the LCD on the MFP displays “MEMORY ERROR” for a hash NG state due to one reason or another is explained below.

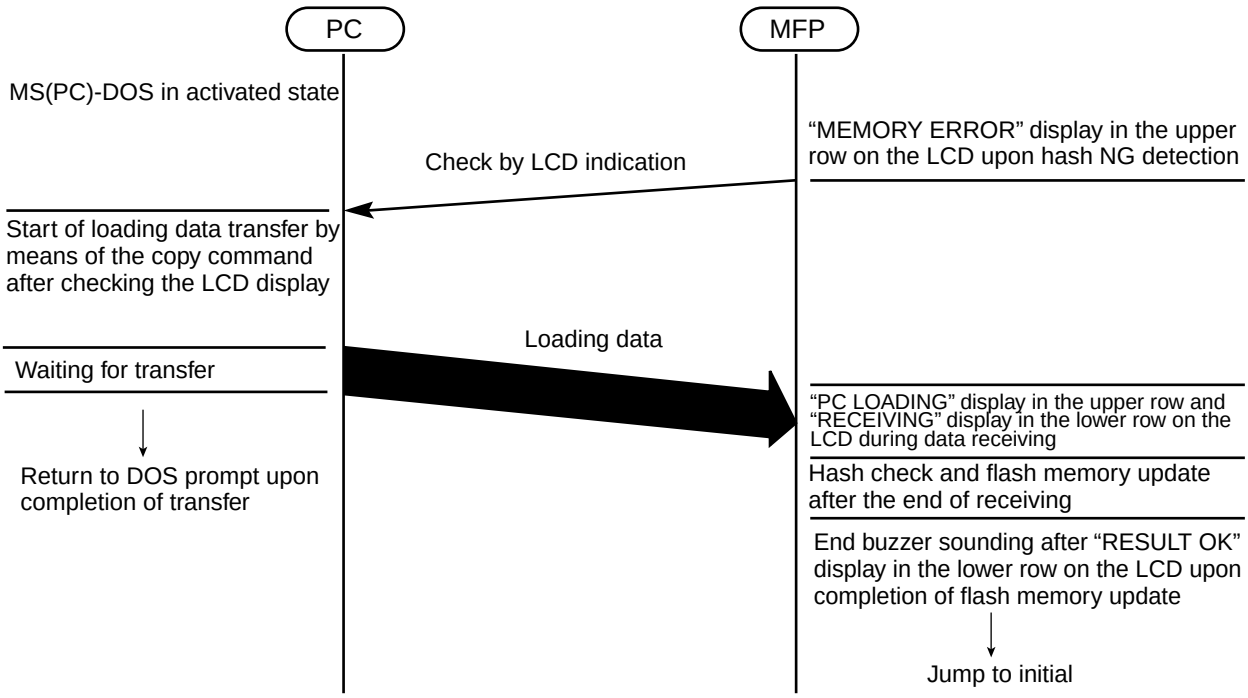
(1) Activate the MS(PC)-DOS with the host PC and the MFP connected via the Centro cable.

(2) Input the copy command from the MS(PC)-DOS on the PC to output the loading data file in binary specification to the LPT1 in order to transfer the loading data to the MFP.

Example:
`>copy/b xxx.x LPT1` (xxx.x is the loading data file name.)

(3) The user shall judge the normal end of data loading by checking the normal end of file output on the PC and sounding of the buzzer indicating the normal end on the MFP. If the MFP displays an error on the LCD, sounds the buzzer for an error or lights up the alarm LED, the user shall judge abnormal end of data loading from the PC and repeat the procedure from step 2 after turning the MFP power off once and to on again.

3.1.2 Procedural Sequence Diagram


PC
MFP
MS(PC)-DOS in activated state
“MEMORY ERROR” display in the upper row on the LCD upon hash NG detection
Check by LCD indication
Start of loading data transfer by means of the copy command after checking the LCD display
Loading data
Waiting for transfer
“PC LOADING” display in the upper row and “RECEIVING” display in the lower row on the LCD during data receiving
Return to DOS prompt upon completion of transfer
Hash check and flash memory update after the end of receiving
End buzzer sounding after “RESULT OK” display in the lower row on the LCD upon completion of flash memory update
Jump to initial

3.2 PC Loading by Manual Operation

3.2.1 Explanation on Procedure

Loading shall be performed as shown below when the PC loading function is selected by key operation by a service man.

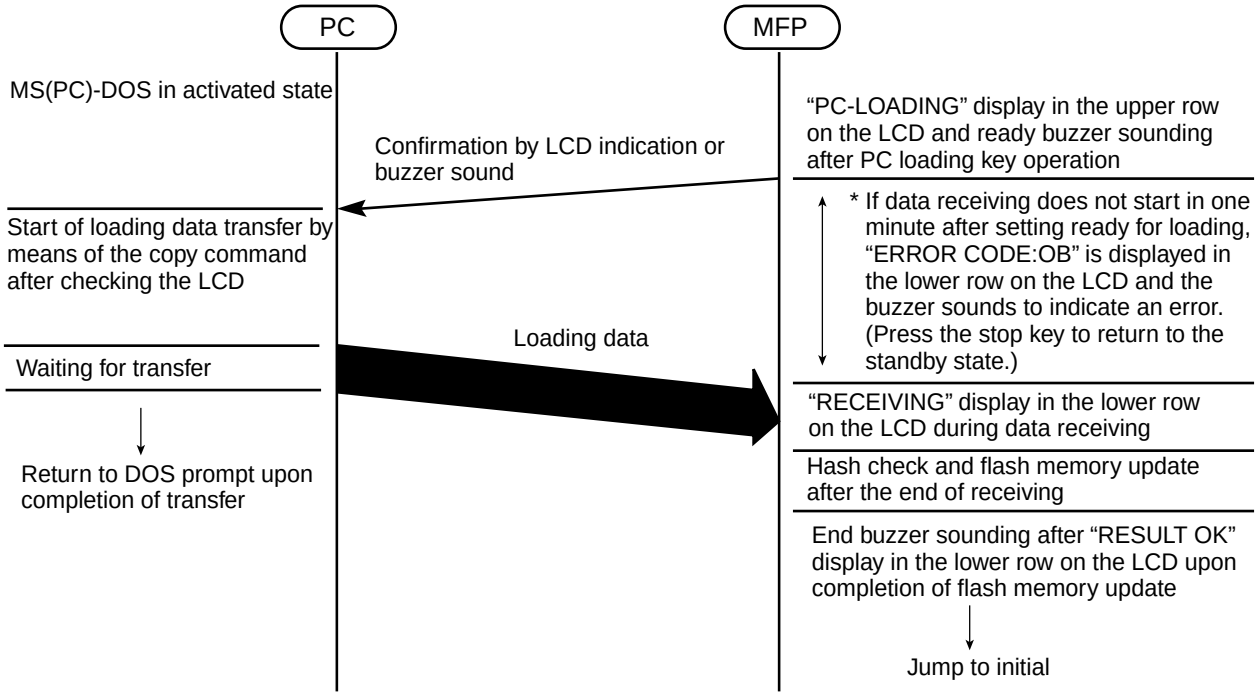
(1) Activate the MS(PC)-DOS with the host PC and the MFP connected via the Centro cable.

(2) Input the copy command from the MS(PC)-DOS on the PC to output the loading data file in binary specification to the LPT1 in order to transfer the loading data to the MFP.

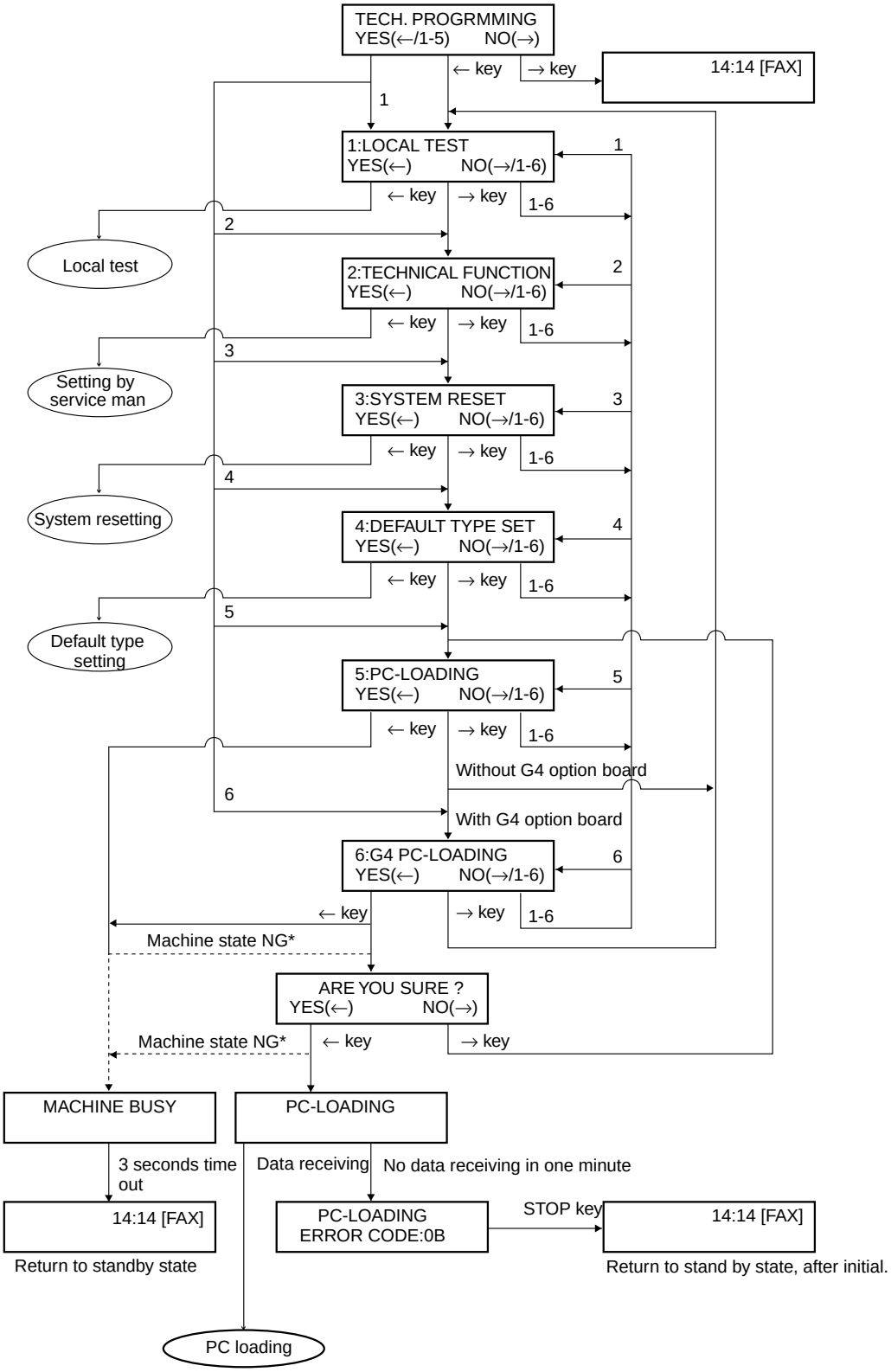
Example:
`>copy/b xxx.x LPT1` (xxx.x is the loading data file name.)

(3) The user shall judge the normal end of data loading by checking the normal end of file output on the PC and sounding of the buzzer indicating the normal end on the MFP. If the MFP displays an error on the LCD, sounds the buzzer for an error or lights up the alarm LED, the user shall judge abnormal end of data loading from the PC and repeat the procedure from step 2 after turning the MFP power off once and to on again. (See "6. List of Error Causes and Corresponding Codes" for the error cause.)

3.2.2 Procedural Sequence Diagram


PC
MFP
MS(PC)-DOS in activated state
"PC-LOADING" display in the upper row on the LCD and ready buzzer sounding after PC loading key operation
Confirmation by LCD indication or buzzer sound
* If data receiving does not start in one minute after setting ready for loading, "ERROR CODE:OB" is displayed in the lower row on the LCD and the buzzer sounds to indicate an error. (Press the stop key to return to the standby state.)
Start of loading data transfer by means of the copy command after checking the LCD
Loading data
Waiting for transfer
"RECEIVING" display in the lower row on the LCD during data receiving
Hash check and flash memory update after the end of receiving
End buzzer sounding after "RESULT OK" display in the lower row on the LCD upon completion of flash memory update
Return to DOS prompt upon completion of transfer
Jump to initial

3.2.3 Operation Flow



* image in memory, redial, delayed fax, alarm (except NO PAPER (*1), TONER LOW/NO IDunit), and OFF HOOK, operate different way, dotted lines.
(*1) : except NO PAPER or PAPER FEED ERROR (RJAM1)

Note: When G4 option board is not installed, the lowest display of LCD is shifted from "No (→/1-6)" to "No (→/1-5)" and "6" selection from each screen cannot be set.

4. LCD Messages

The LCD message in each operation state is shows below. Note that each message does not vary with the default type or language type.

(1) Upon transition to PC loading function

Transition by manual operation

```
PC-LOADING
```

Transition by a memory error

```
MEMORY ERROR
```

(2) During data receiving before loading end buzzer sounding

```
PC-LOADING
RECEIVING
```

(3) During loading end buzzer sounding

```
PC-LOADING
RESULT OK
```

(4) Upon error occurrence during loading

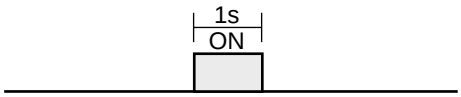
```
  PC-LOADING
ERROR   CODE:**
```

"**": Error code (See "6. List of Error causes and Corresponding Codes.")

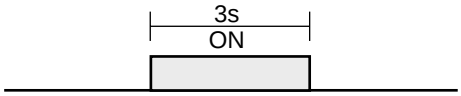
5. Buzzer Sounding Patterns

The buzzer sounding patterns for various cases are shown below. In each case, the buzzer frequency is 2,400 Hz and the sound volume is maximum.

5.1 Upon Start of PC Loading



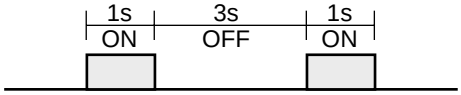
5.2 Upon Normal End



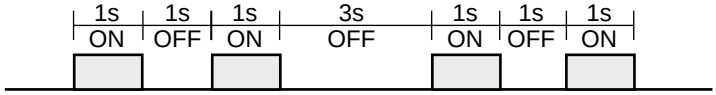
5.3 Upon Error Occurrence

The following sounding patterns are provided for indicating various error causes. Intermittent sounding is repeated until the MFP power is turned off. See “6. List of Error Causes and Corresponding Codes” for details of the error causes and codes.

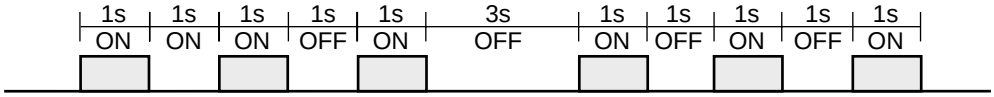
(1) Receive data hash check NG (error code: “01”)



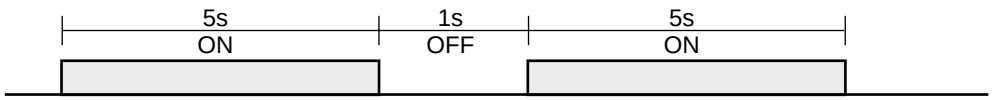
(2) Flash memory erase/write NG (error code: “02”)



(3) Disagreement between contents of flash memory and external RAM (error code: “03”)



(4) Other error (error code: other other than above)



6. List of Error Causes and Corresponding Codes

The table below lists the error causes likely to occur during PC loading and the corresponding codes. When an error occurs, the corresponding error code is displayed, the buzzer sounds in the corresponding pattern and transition to the permanent loop state occurs. (See Note 1.)

See “4. LCD Messages” and “5. Buzzer Sounding Patterns” for the LCD display and buzzer sound upon occurrence of each error.

No.	Error cause	CODE
1	Timeout of data receiving waiting timer (14 seconds)	00
2	Loading data hash check error	01
3	Flash memory erase/write error	02
4	Disagreement between flash memory and external RAM contents (verify error)	03
5	Header sum check NG *1	04
6	Disagreement between loading machine type and machine identifier in header *1	05
7	Designation of unspecified parameter in header *1	06
8	Extended address record sum check NG *2	07
9	Data record sum check NG *2	08
10	Start address record sum check NG *2	09
11	File end record sum check NG *2	0A
12	Timeout by failure in normal data receiving for 1 minute in loading waiting state after operation	0B
13	RAM check result NG upon starting loading program processing	0C

*1. Occurs only in binary format specification.
*2. Occurs only in Intel HEX code specification (reservation code not actually used).

Note: No error processing (transition to permanent loop state after error code display and buzzer sounding in corresponding pattern) occurs when any of the following errors occurs in receiving the loading program header. The receive data until error occurrence is discarded and the program header receiving starts from the beginning again.

(1) Header sum check NG
(2) Disagreement between loading machine type and machine identifier in header
(3) Designation of unspecified parameter in header
(4) Designation of other than loading program as data type identifier in header
(5) Designation of no succeeding data in descriptor
(6) Designation of Intel HEX format as data type
(7) 14 seconds timeout in header receiving end waiting state

7. Cautions

(1) Execute the copy command for PC loading after sounding of the buzzer indicating the ready state for loading (for about 1 second). Since the buzzer does not sound for PC loading upon memory error detection, however, execute the copy command after checking “MEMRY ERROR” indication on the LCD after power on.

(2) Even after returning to the DOS prompt state after the end of the copy command on the PC, do not turn the MFP power off until the buzzer indicating the end of MFP loading sounds.

8. Loading Processing Time

The processing time for reloading in the whole OKIFAX4550/OKIOFFICE87 area (program 1, language and default) is shown below.
Use the value only as reference since the transfer time varies with each type of PC.

Measuring conditions:

MFP	: OKIFAX4550/OKIOFFICE87
Flash memory	: MBM29F800T (non-cleared state)
Transfer file version	: RA2

Result:

Time for transfer from PC to FAX main unit	: Approx. 45 seconds
Flash memory update time	: Approx. 25 seconds

APPENDIX G RMCS SYSTEM MANUAL (For Model 40)

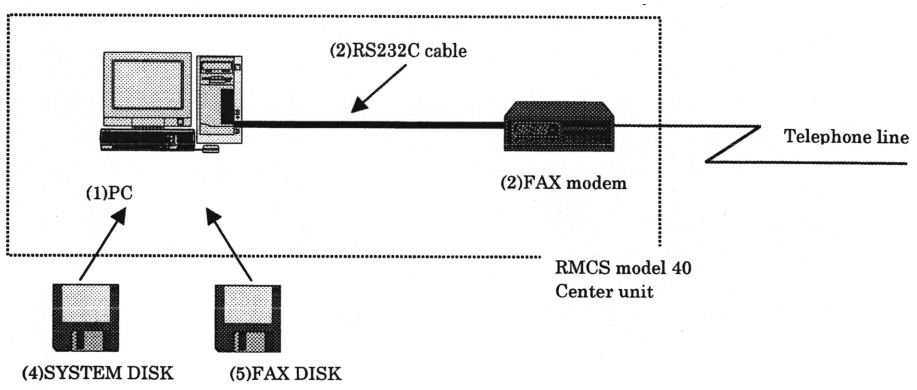
1. Notes to RMCS user

1.1 Introduction

RMCS stands for the Remote Management Center System. The purpose of this system is to speed up customer service and reduce maintenance costs.

1.2. System Configuration of RMCS MODEL40

System configuration of RMCS Model 40 is shown below. PC, FAX Modem are needed for the system.



(1) PC : IBM PC or compatible PC with Windows95/98 or Windows NT4.0.
(2) FAX modem : Any FAX modem be accessed by a serial port of Windows system. To achieve the good stability and performance, the FAX modem shown in Table-1 are recommended, which has been tested during development.
(3) RS232C cable : In case the FAX modem needs the cable to attach to the PC
(4) SYSTEM DISK : To install this system and FAX DISKs.
(5) FAX DISK : FAX DISK corresponds to each FAX model. This software includes default data and communication control program for the target model of FAX machine.

1.3 Required System

The RMCS (Remote Management Center System) for Win must be installed in the PC that has Windows-OS installed in order to run maintenance works from a remote location by using the RMCS for Win.
The PC system, in which the RMCS for Win is installed and executed for maintenance works, differs depending on the operation system.
The following system configuration is required to use the RMCS for Win.

OS	Windows95 (OSR2~)	Windows98	WindowsNT4.0 with Service Pack 4 or higher	Windows2000
CPU	Pentium 166MHz or higher			
Memory	32MB or higher			
Hard Disk	20MB or higher of free space			
Monitor Resolution	640 dots × 480 dots or higher			
Recommended Fax Modem	U.S.Robotics 56k faxmodem - External Model #5686			

2. Quick Set-up manual for RMCS Model 40

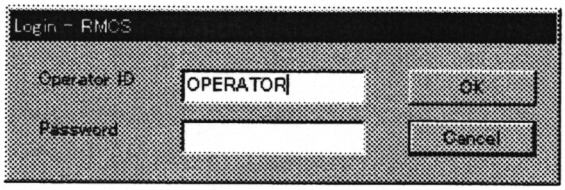
2.1 RMCS Installation

1) Insert the disk to set up the RMCS in the drive.
2) Start up Installer.
3) Execute installation by following the SETUP screen.
   * You can set an operator password during Install.
   * You can skip password registration.
   * You can use up to 15 alphanumeric characters to set up a password.
   * You can change the registered password after installation.
   * You can enter up to 15 alphanumeric characters for a password.

3. Startup

3.1 Entering Operator ID

As the RMCS MODEL 40 starts up, you are queried for entering an operator ID.
You can confirm the operator ID you entered on the System Main screen or the Model Main screen after the RMCS started up.

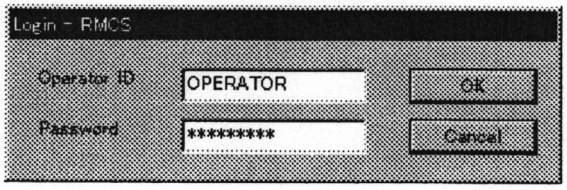


* You can enter up to 50 alphanumeric characters for operator IDs.
* If you want to change the operator ID, you must exit RMCS first, then re-boot it.

3.2 Entering Password

You are queried for entering a password at the same time as entering an operator ID.

1) Enter an operator password.
   * Enter the password that was registered during installation of the RMCS for Win or the password modified later.
   * If no password has been registered, you need not input any herein.

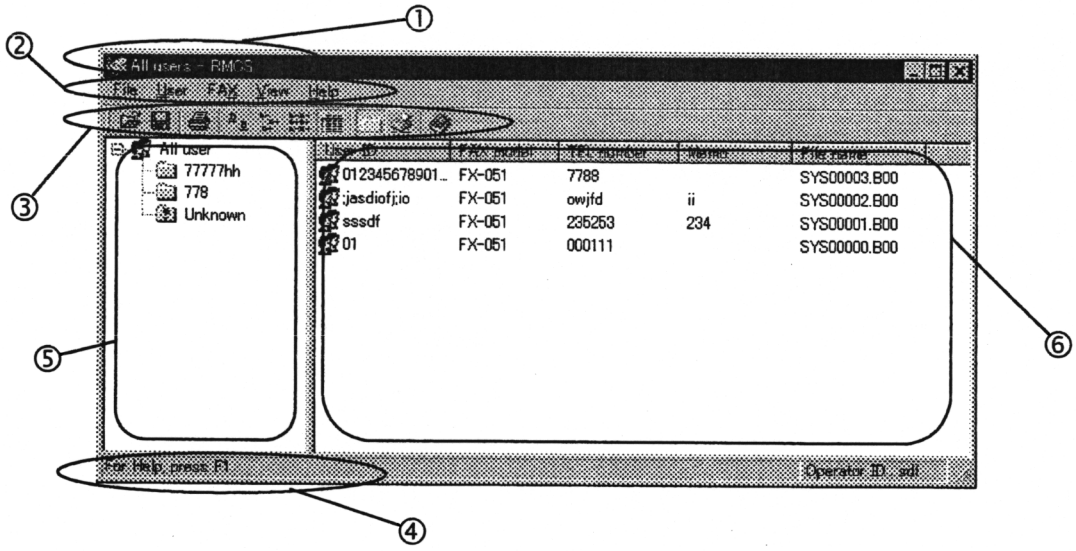


2) Press the OK button.
   * If you enter the password incorrectly three times, the RMCS closes and it does not boot up.

4. SYSTEM Main Screen

4.1 Screen Titles

Once the RMCS for Win is booted, the System Main screen appears.
The titles used in the System Main screen are explained next.



① Title Bar:
Displays the folder names that are displayed on the User Display window.

② Menu Bar:
Displays the menu that executes the various functions.

③ Toolbar:
Displays by the icons the functions that you can execute by clicking.
You can switch Toolbar display/not display on the View Menu.

④ Status Bar:
Displays the status of RMCS, Menu descriptions, and also operator ID.
You can switch Status bar display/not display on the View menu.

⑤ Users (RMCS users) Category Window:
Displays the facsimile models that are currently registered, or the folders that the operator has customized.
You can switch the display by the facsimile models or by the folders, on the View menu or by the icons on the Toolbar.

⑥ Users (Field users) Display Window
Displays all users that are currently registered.
You can switch Large Icons, Small Icons, List and Details, on the [View] menu or by the icon on the Toolbar.

4.2 DISK by Models

4.2.1 Adding Models

You must run Install by using the DISK by the models and add models to run maintenance on the facsimile devices. The procedure is explained next.

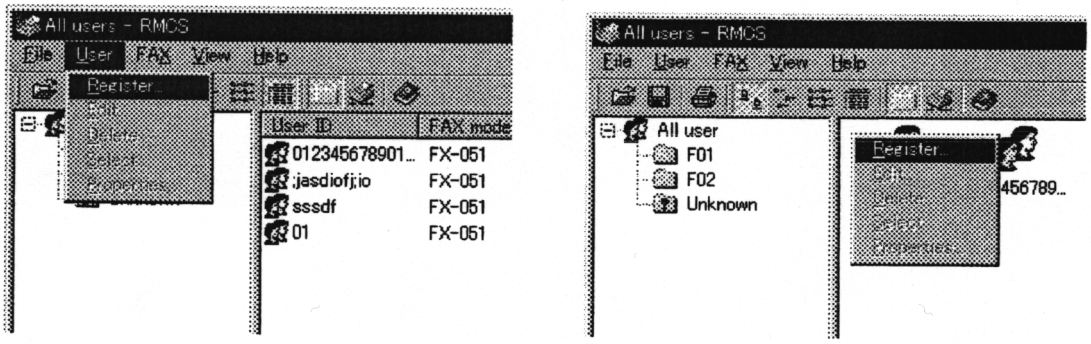
(1) Insert the DISK by the facsimile models in the drive.
(2) Select [Install] on the [FAX] menu.
(3) Select on the Dialog screen the drive where you have inserted the DISK by the facsimile models.
(4) Press the OK button.
(5) Confirm the facsimile device you want to add has been added to the User Category window at the System Main screen.

4.3 Manipulating User Information

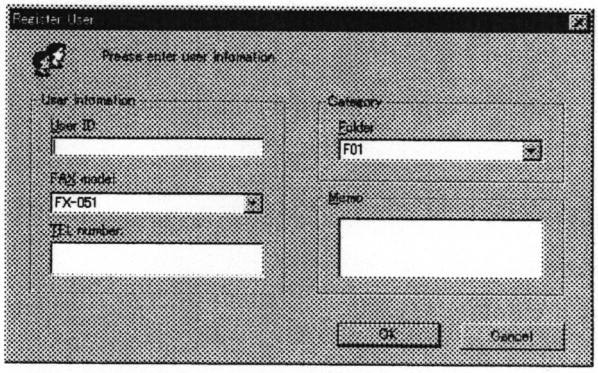
4.3.1 Registering User Information

You must register user information to run maintenance works.

1) Select a folder you want to register at the User Category window.
2) Select [Register] on the [User] menu.
   * You can select by right clicking at the User Display window.



3) The Register Dialog screen appears.
4) Enter each item and press the OK button.



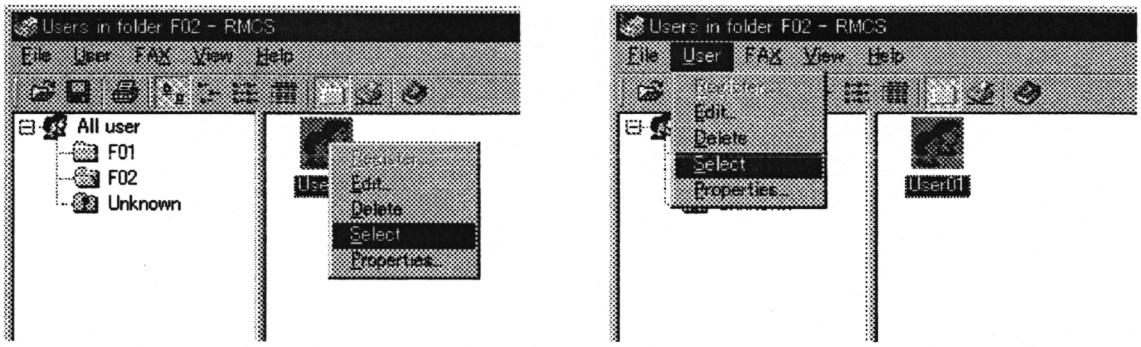
* The following four items are subject to registration.
  1. User ID: Enter up to 15 alphanumeric characters (must)
  2. FAX model: Select on the Pull-down menu. (must)
  3. TEL number: Enter a TEL number of up to 48 digits. (must)
  4. Fold: Select on the Pull-down menu. (choice)
  5. Memo: Enter up to 50 alphanumeric characters (choice)

* You cannot register by the User ID name that is already registered.

4.3.2 Selecting User Information

To select the user information subject to maintenance so as to move to the Model OFFLINE screen.

1) Select the user information on which you want to run maintenance at the User Display window.
2) Select [Select] on the [User] menu.
   * You can select by right clicking at the All Users window.
   * You can select by double clicking at the level when user information is selected.

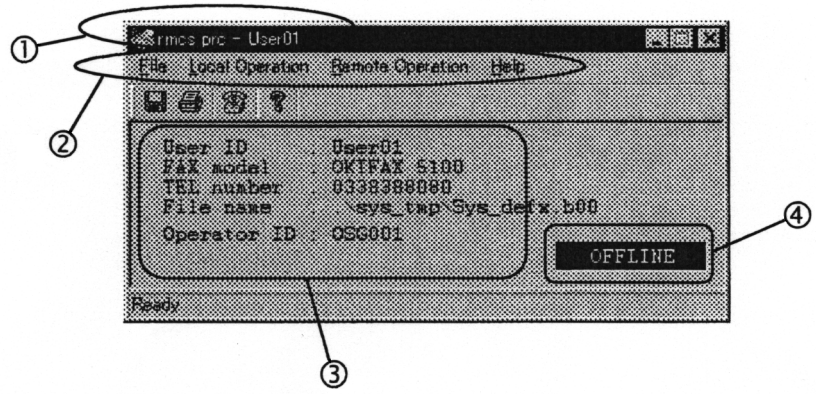


3) The Model OFFLINE screen appears.

5. Model Main Screen

5.1 Screen Title

When User Information is selected at the RMCS for Win SYSTEM Main screen, the Model Main screen appears.
The Model Main screen is explained next.



① Title Bar:
To display the facsimile model name

② Menu Bar:
To display the menu at which each function is executed

③ Area to display user information and operator information:
To display user information and operator IDs to set/display/edit

④ ONLINE/OFFLINE display:
To recognize ONLINE/OFFLINE status of setup information currently displayed

5.2 ONLINE Operation

Select items on the [Remote Operation] menu, to run ONLINE operations through the communication circuit.

1) Change the telephone number, if necessary, at the [TEL number setting] sub-menu on the [Local Operation] menu.
2) Select items on the [Remote Operation] menu.

Initialization of FAX
File [LOAD (→ FAX)]
File [SAVE (→ HD)]
[EDIT] (ON LINE)
Testing
Disconnect

3) Confirm that ONLINE is displayed at the Model Main screen.

5.2.1 Loading

To load file-format data from the RMCS (maintenance work PC) to the target FAX device.
The data in the target FAX device is replaced with the loaded data.

1) Select items to load at the [File[LOAD(→FAX)]] sub-menu on the [Remote Operation] menu.

All data
User data
Serviceman data
TEL number data
Program/Language/Default data

2) (File loading.)
3) Select the [Disconnect] sub-menu on the [Remote Operation] menu to close the circuit.
   * You can select a new item on the [Remote Operation] menu without disconnecting the line.
4) Confirm that OFFLINE is displayed on the Model Main screen.

5.2.2 Saving

To upload the file-format data from the target FAX device in the RMCS (maintenance work PC) and save.
The data that is saved in the RMCS is replaced by the newly saved data.

1) Select the [FILE[SAVE(→HD)]] sub-menu on the [Remote Operation] menu.
2) Select a driver and a folder to save at the dialog screen.
3) (File saving.)
4) Select the [Disconnect] sub-menu on the [Remote Operation] menu to close the circuit.
   * You can select a new item on the [Remote Operation] menu without closing the circuit.
5) Confirm that OFFLINE is displayed on the Model Main screen.

5.2.3 Editing

To edit/set contents of data on the target FAX device from the RMCS (maintenance work PC) side You can also save the data you edited/set in the RMCS. In this case, the data saved in the RMCS is replaced with the data you have just saved.

1) Select an item to edit/set at the [EDIT(ONLINE)] Sub-menu on the [Remote Operation] menu.
2) The dialog screen for User/Serviceman/Telephone number data appears.
3) Edit/set the contents of data.

User data
Serviceman data
TEL number data

Updating the data on the target FAX device side:
4) Press the LOAD button.
5) (File loading.)
6) Select the [Disconnect] sub-menu on the [Remote Operation] menu to close the circuit.
   * You can select a new item on the [Remote Operation] menu without closing the circuit.
7) Confirm that OFFLINE is displayed on the Model Main screen.

Updating the data on the RMCS (Maintenance work terminal) side:
4) Press the SAVE button.
5) Select a drive and a folder at the SAVE dialog screen and press the OK button.
6) Select the [Disconnect] sub-menu on the [Remote Operation] menu to close the circuit.
   * You can select a new item on the [Remote Operation] menu, without closing the circuit.
7) Confirm that OFFLINE is displayed on the by the Model Main screen.

5.2.4 Initializing

To initialize the contents of registration of the target FAX device by sending the initialization command to the target FAX device from the RMCS (Maintenance work PC).

(1) Select an item to initialize at the [Initialization of FAX] sub-menu on the [Remote Operation] menu.

All data
User data
Serviceman data
TEL number data
Activity report data
Drum counter
Toner counter
Drum(T) counter
Print counter
Scan counter

APPENDIX H OKIFAX4550/OKIOFFICE87 TROUBLESHOOTING MANUAL

1. General

This manual shall be used to identify the failure cause when a failure of the board is detected as a result of recovery through board replacement, etc. Therefore, the solder failure, pattern failure, part mounting failure are excluded.

2. Tools

The following tools are recommended for board analysis:

(1) Oscillator: At a frequency of 100 MHz or higher
(2) Soldering iron: 15 to 20 W for IC replacement. A soldering iron with a higher capacity should be better for the power supply pattern, etc.
(3) Extension cable: See Extension cable list in Chapter 7.

3. Contents

3.1 46F Board (OKIFAX4550)

No.	Description	Remarks	See:
01	Memory error	LCD display or test print NG	Figures H.1(1/4~4/4)
02	Reading running system NG	Document feed error, etc.	Figure H.2
03	Read image data NG	All white, all black, image disturbance, etc.	Figures H.3(1/2, 2/2)
04	Heater NG	Printer alarm 4, etc.	
05	Recording paper running system NG	Recording paper feed error, etc.	Figures H.4(1/2, 2/2)
06	Printed image data NG	Sector missing, positive after-image, etc.	Figures H.5(1/6~6/6)
07	Sending NG	Call origination error, protocol sending/ receiving error, etc.	
08	Receiving NG	Call termination error, protocol sending/ receiving error, etc.	
09	Clock NG	Clock display error, time error, etc.	Figures H.6(1/2, 2/2)
10	No sound from the speaker	Buzzer/monitor error, etc.	
11	PC I/F not operating correctly	PC print/PC FAX error, etc.	Figures H.8(1/2, 2/2)
12	Operation I/F not operating correctly	LCD not displayed, key invalid, etc.	

3.2 R46 Board (OKIOFFICE87)

No.	Description	Remarks	See:
01	Memory error	LCD display or test print NG	Figures H.1 (1/4~4/4)
02	Reading running system NG	Document feed error, etc.	Figure H.2
03	Read image data NG	All white, all black, image disturbance, etc.	Figures H.3 (1/2, 2/2)
04	Heater NG	Printer alarm 4, etc.	
05	Recording paper running system NG	Recording paper feed error, etc.	Figures H.4 (1/2, 2/2)
06	Printed image data NG	Sector missing, positive after-image, etc.	Figures H.5 (1/6~6/6)
07	Sending NG	Call origination error, protocol sending/ receiving error, etc.	
08	Receiving NG	Call termination error, protocol sending/ receiving error, etc.	
09	Clock NG	Clock display error, time error, etc.	Figures H.7 (1/2, 2/2)
10	No sound from the speaker	Buzzer/monitor error, etc.	
11	PC I/F not operating correctly	PC print/PC FAX error, etc.	Figures H.8 (1/2, 2/2)
12	Operation I/F not operating correctly	LCD not displayed, key invalid, etc.	

3.3 O4W Board

No.	Description	Remarks	See:
01	LCD display NG	LCD not displayed (LCD failures excluded)	
02	Operation not responded	Key press or LED invalid	

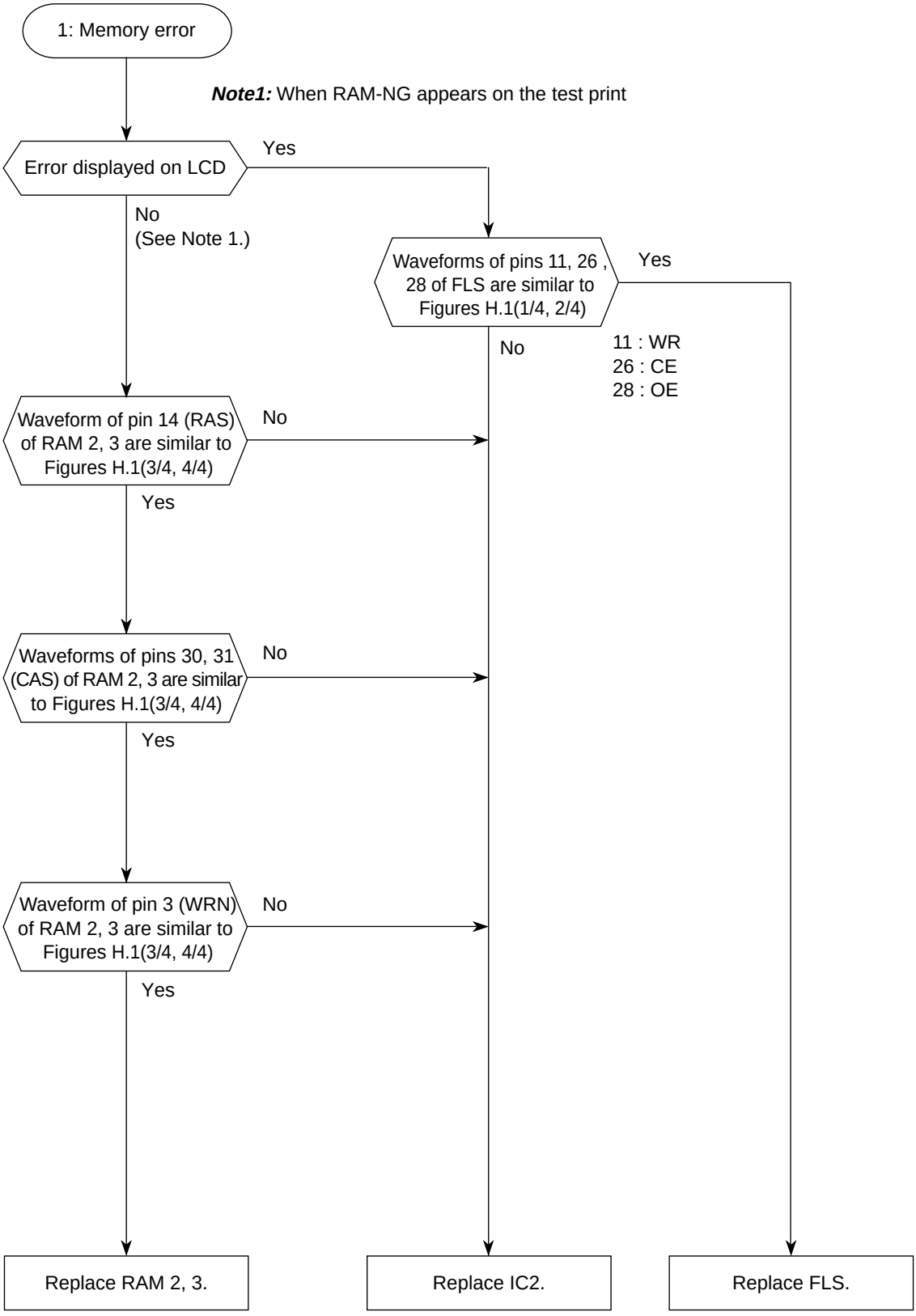
3.4 G4N Board

No.	Description	Remarks	See:
01	ISDN Board NG (01)	ISDN Board NG (code:01) at self diagnosis	
02	ISDN Board NG (02)	ISDN Board NG (code:02) at self diagnosis	Figure H.9
03	ISDN Board NG (03)	ISDN Board NG (code:03) at self diagnosis	Figures H.10 (1/3~3/3)
04	ISDN Board NG (04)	ISDN Board NG (code:04) at self diagnosis	Figures H.11 (1/3~3/3)
05	ISDN Board NG (05)	ISDN Board NG (code:05) at self diagnosis	
06	CPU ROM HASH NG	CPU ROM HASH NG at self diagnosis	
07	CPU RAM NG	CPU RAM NG at self diagnosis	
08	PROGRAM HASH NG	PROGRAM HASH NG at self diagnosis	Figure H.9
09	RAM NG	RAM NG at self diagnosis	Figure H.12
10	DPRAM NG	DPRAM NG at self diagnosis	Figures H.10 (1/3~3/3)
11	G4 mode communication NG	Communication error at G4 mode on ISDN	Figures H.11 (1/3~3/3), Figures H.13 (1/2, 2/2)
12	G3 mode communication NG	Communication error at G3 mode on ISDN	Figures H.14 (1/2, 2/2)
13	G4 mode PC loading NG	PC loading error (G4 program)	Figure H.9, Figures H.10 (1/3~3/3), Figure H.12
14	Power ON NG (01)	LCD display "ISDN BOARD I/F ERROR" at power on	Figure H.9, Figures H.10 (1/3~3/3), Figures H.11 (1/3~3/3)
15	Power ON NG (02)	G4N board isn't detected.	

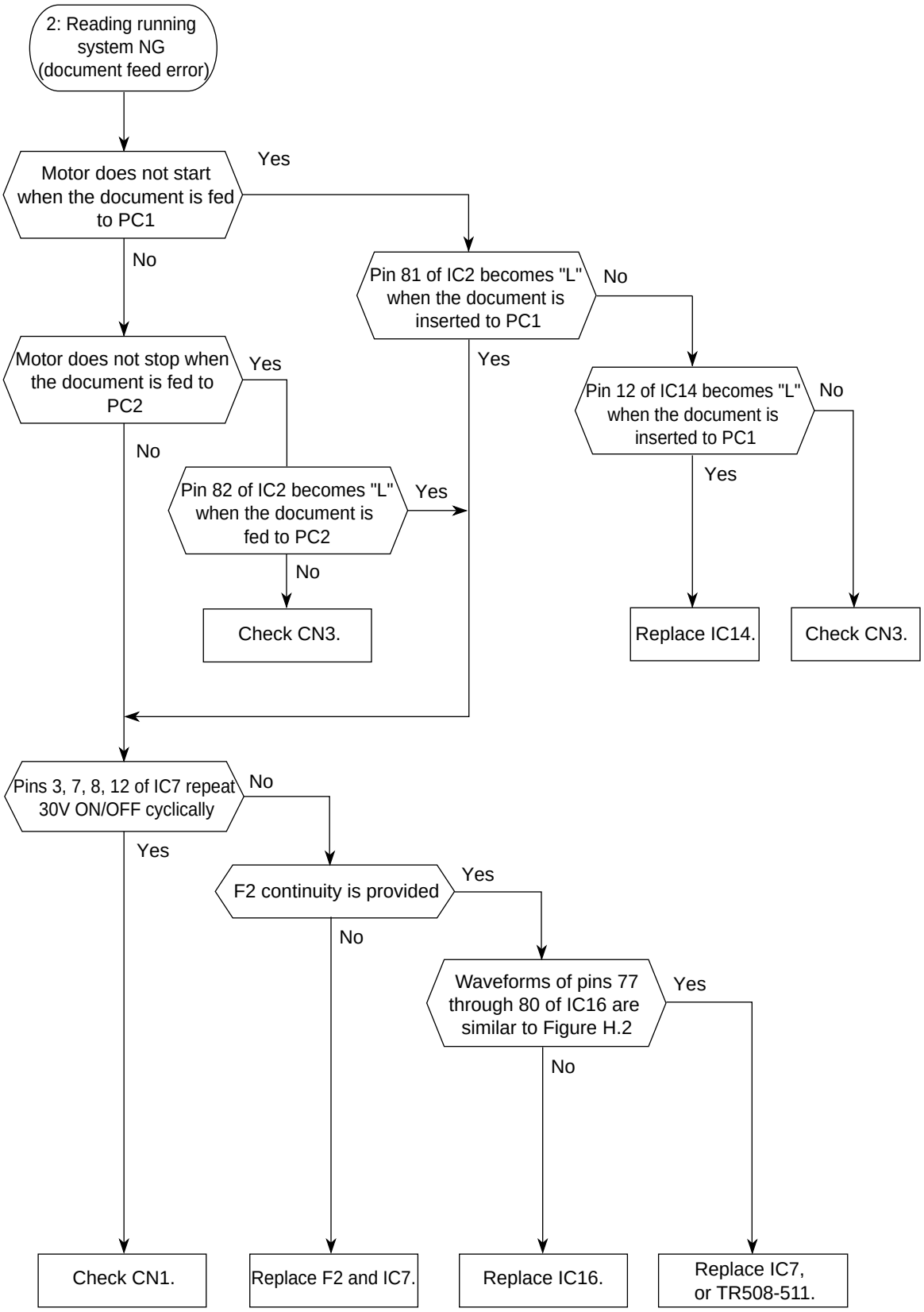
4. Description

4.1 46F Board (OKIFAX4550)

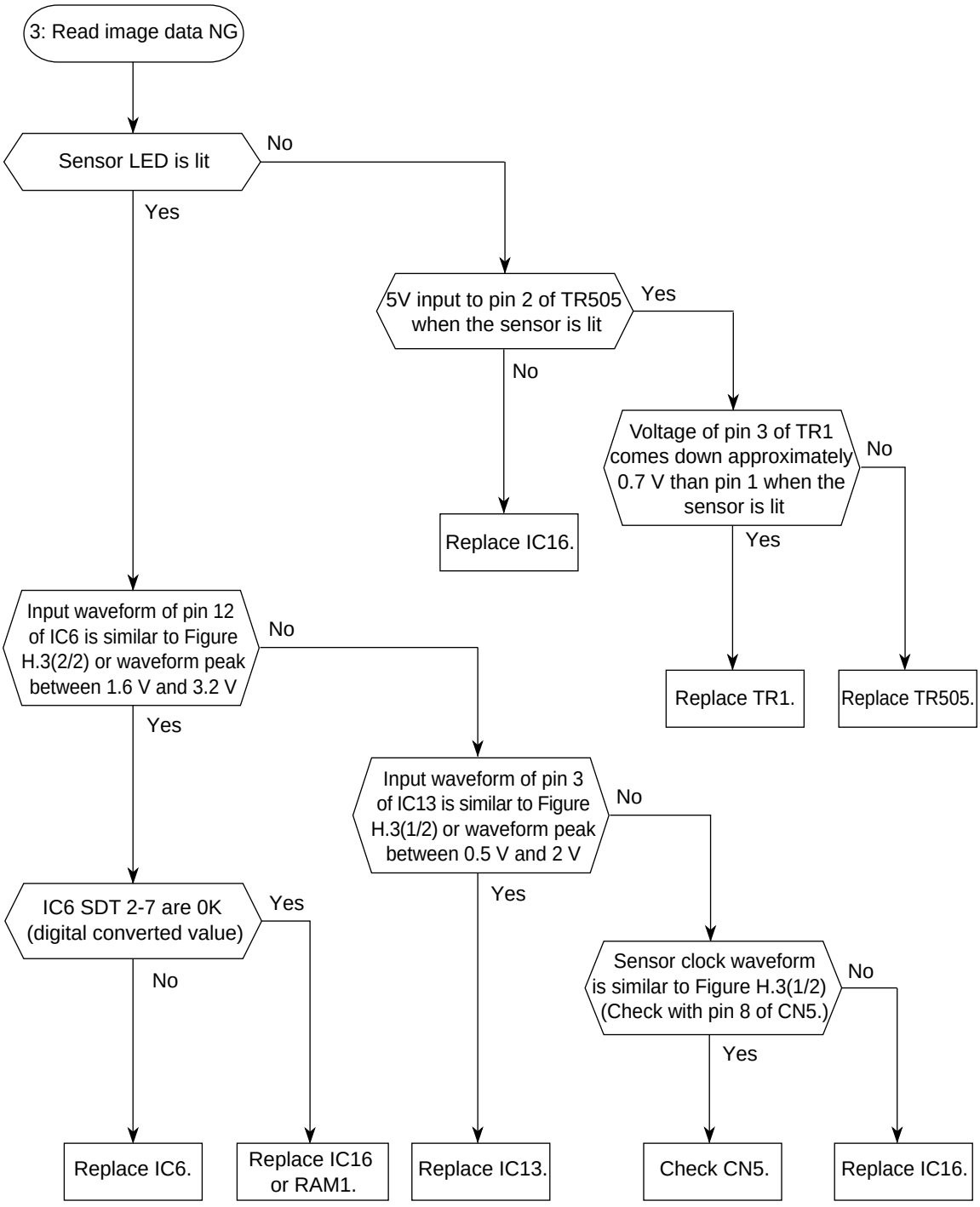
4.1.1 Memory error


1: Memory error
Note1: When RAM-NG appears on the test print
Error displayed on LCD
Yes
No
(See Note 1.)
Waveforms of pins 11, 26 , 28 of FLS are similar to Figures H.1(1/4, 2/4)
Yes
No
11 : WR
26 : CE
28 : OE
Waveform of pin 14 (RAS) of RAM 2, 3 are similar to Figures H.1(3/4, 4/4)
No
Yes
Waveforms of pins 30, 31 (CAS) of RAM 2, 3 are similar to Figures H.1(3/4, 4/4)
No
Yes
Waveform of pin 3 (WRN) of RAM 2, 3 are similar to Figures H.1(3/4, 4/4)
No
Yes
Replace RAM 2, 3.
Replace IC2.
Replace FLS.

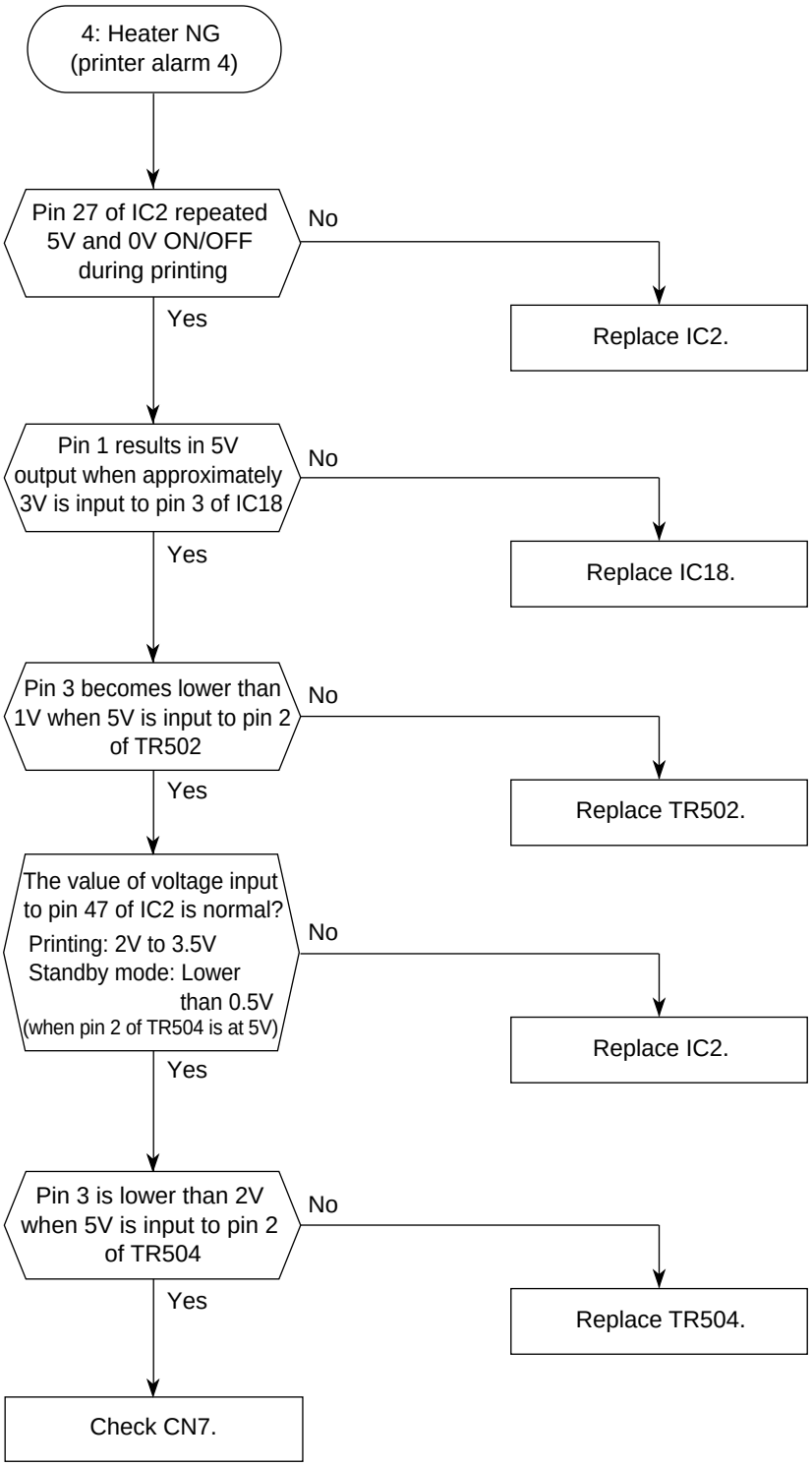
4.1.2 Reading running system NG


2: Reading running system NG (document feed error)
Motor does not start when the document is fed to PC1
Yes
No
Pin 81 of IC2 becomes "L" when the document is inserted to PC1
No
Yes
Motor does not stop when the document is fed to PC2
Yes
No
Pin 12 of IC14 becomes "L" when the document is inserted to PC1
No
Yes
Pin 82 of IC2 becomes "L" when the document is fed to PC2
Yes
No
Check CN3.
Replace IC14.
Check CN3.
Pins 3, 7, 8, 12 of IC7 repeat 30V ON/OFF cyclically
No
Yes
F2 continuity is provided
Yes
No
Waveforms of pins 77 through 80 of IC16 are similar to Figure H.2
Yes
No
Check CN1.
Replace F2 and IC7.
Replace IC16.
Replace IC7, or TR508-511.

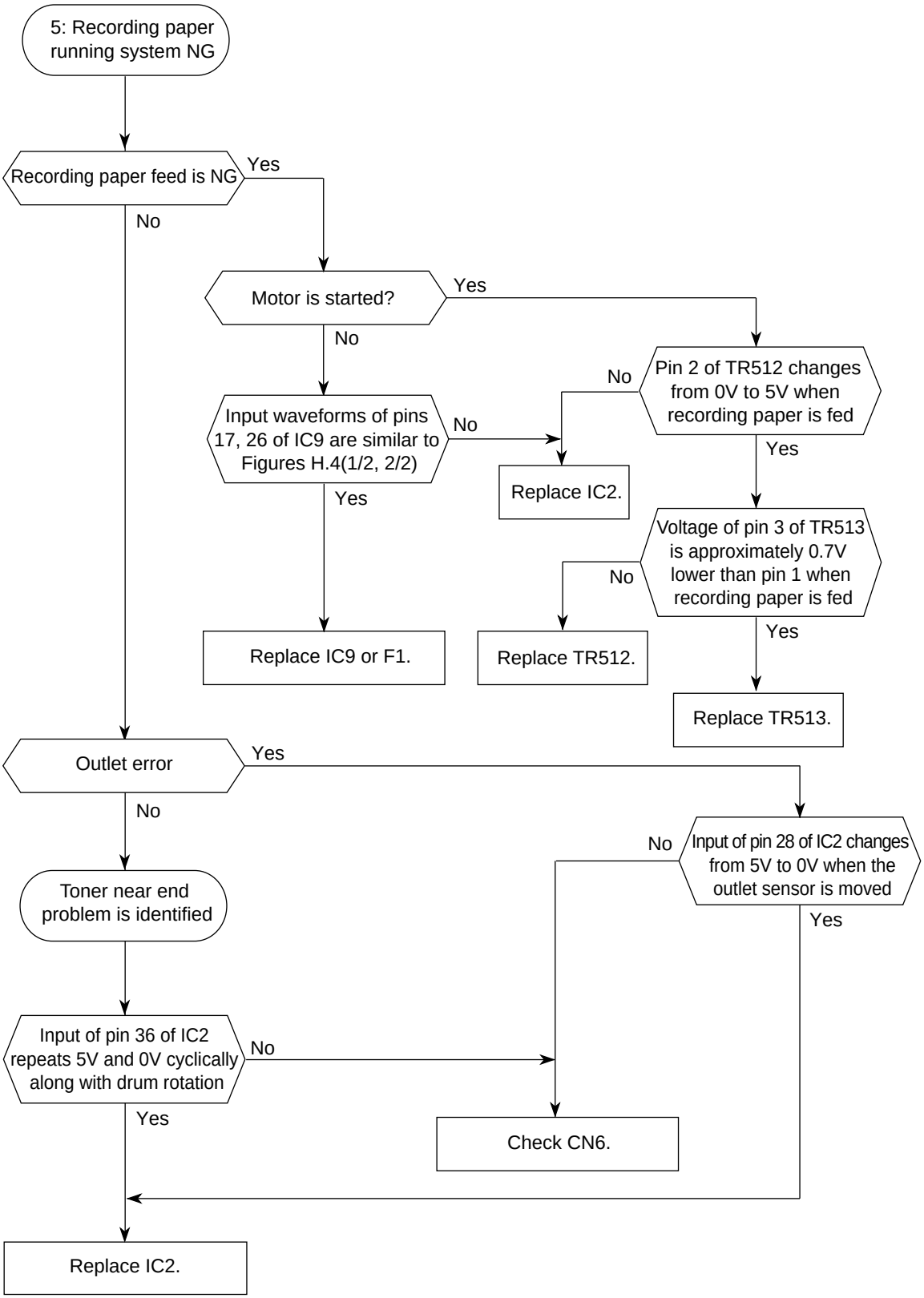
4.1.3 Read image data NG


3: Read image data NG
Sensor LED is lit
No
Yes
5V input to pin 2 of TR505 when the sensor is lit
Yes
No
Replace IC16.
Voltage of pin 3 of TR1 comes down approximately 0.7 V than pin 1 when the sensor is lit
No
Yes
Replace TR1.
Replace TR505.
Input waveform of pin 12 of IC6 is similar to Figure H.3(2/2) or waveform peak between 1.6 V and 3.2 V
No
Yes
Input waveform of pin 3 of IC13 is similar to Figure H.3(1/2) or waveform peak between 0.5 V and 2 V
No
Yes
IC6 SDT 2-7 are 0K (digital converted value)
Yes
No
Sensor clock waveform is similar to Figure H.3(1/2) (Check with pin 8 of CN5.)
No
Yes
Replace IC6.
Replace IC16 or RAM1.
Replace IC13.
Check CN5.
Replace IC16.

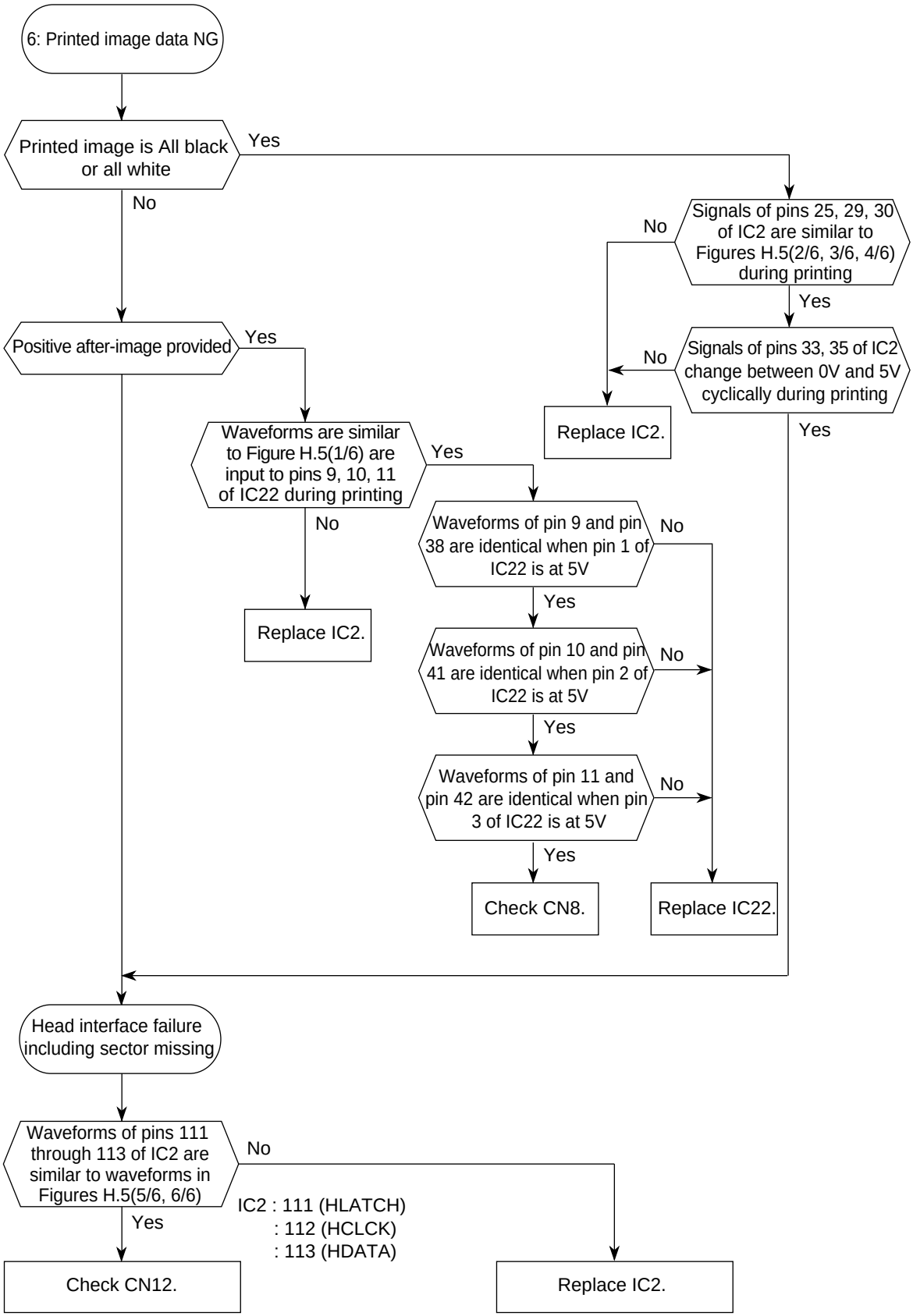
4.1.4 Heater NG


4: Heater NG
(printer alarm 4)
Pin 27 of IC2 repeated 5V and 0V ON/OFF during printing
No
Replace IC2.
Yes
Pin 1 results in 5V output when approximately 3V is input to pin 3 of IC18
No
Replace IC18.
Yes
Pin 3 becomes lower than 1V when 5V is input to pin 2 of TR502
No
Replace TR502.
Yes
The value of voltage input to pin 47 of IC2 is normal?
Printing: 2V to 3.5V
Standby mode: Lower than 0.5V
(when pin 2 of TR504 is at 5V)
No
Replace IC2.
Yes
Pin 3 is lower than 2V when 5V is input to pin 2 of TR504
No
Replace TR504.
Yes
Check CN7.

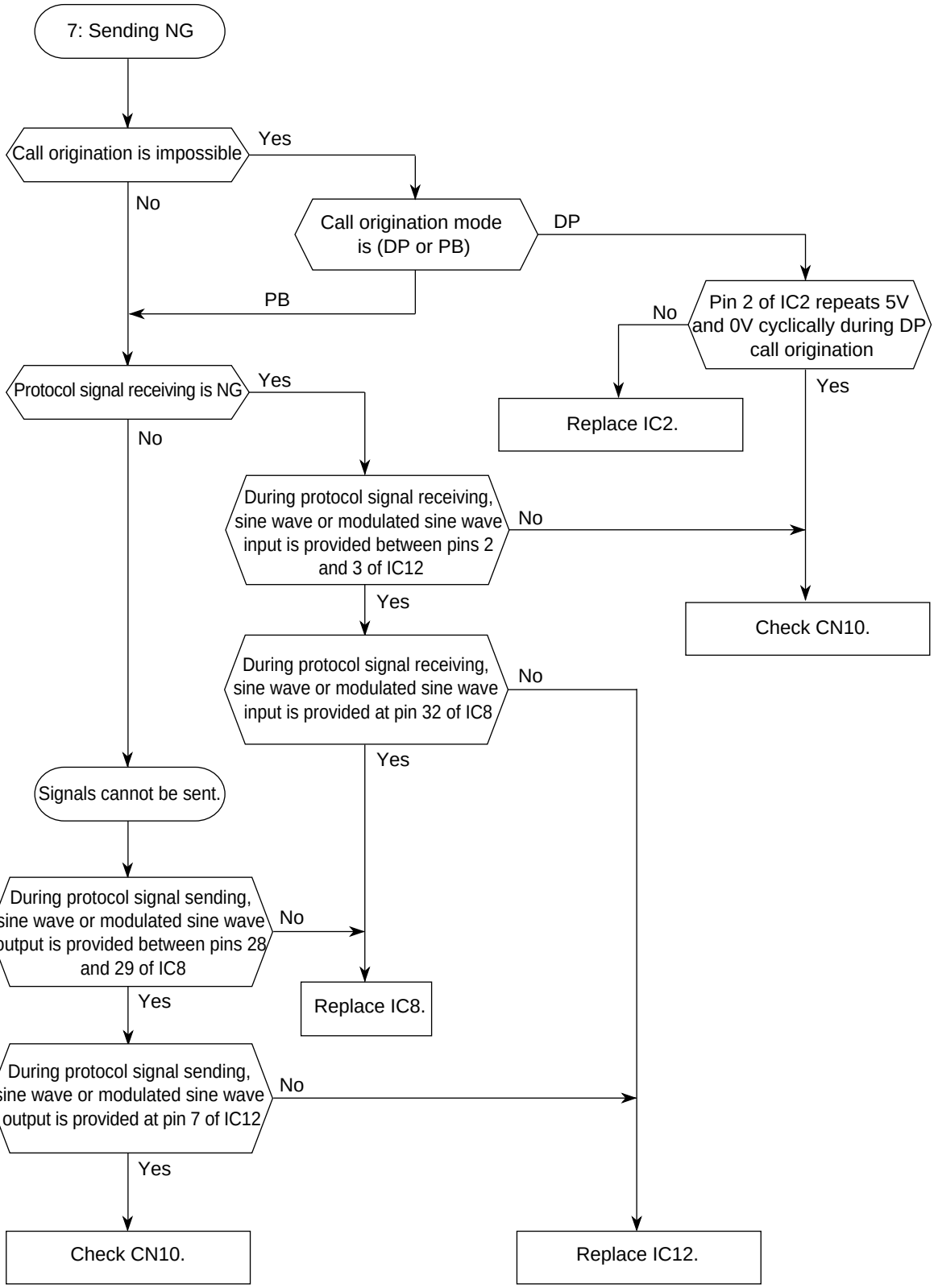
4.1.5 Recording paper running system NG


5: Recording paper running system NG
Recording paper feed is NG
Yes
No
Motor is started?
Yes
No
Input waveforms of pins 17, 26 of IC9 are similar to Figures H.4(1/2, 2/2)
No
Yes
Replace IC2.
Pin 2 of TR512 changes from 0V to 5V when recording paper is fed
No
Yes
Voltage of pin 3 of TR513 is approximately 0.7V lower than pin 1 when recording paper is fed
No
Yes
Replace IC9 or F1.
Replace TR512.
Replace TR513.
Outlet error
Yes
No
Toner near end problem is identified
Input of pin 28 of IC2 changes from 5V to 0V when the outlet sensor is moved
No
Yes
Input of pin 36 of IC2 repeats 5V and 0V cyclically along with drum rotation
No
Yes
Check CN6.
Replace IC2.

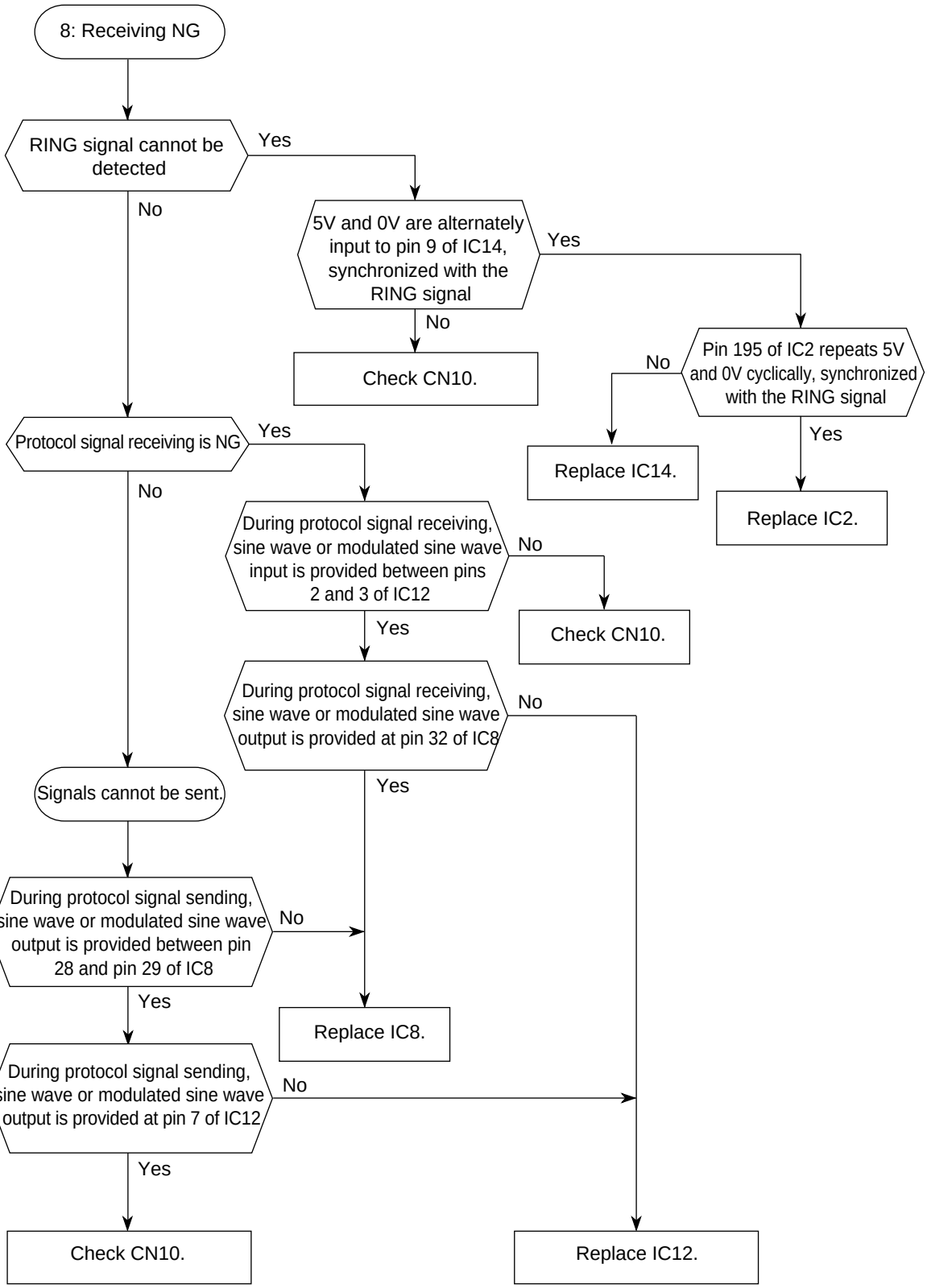
4.1.6 Printed image data NG


6: Printed image data NG
Printed image is All black or all white
Yes
No
Signals of pins 25, 29, 30 of IC2 are similar to Figures H.5(2/6, 3/6, 4/6) during printing
No
Yes
Signals of pins 33, 35 of IC2 change between 0V and 5V cyclically during printing
No
Yes
Positive after-image provided
Yes
Replace IC2.
Waveforms are similar to Figure H.5(1/6) are input to pins 9, 10, 11 of IC22 during printing
Yes
No
Replace IC2.
Waveforms of pin 9 and pin 38 are identical when pin 1 of IC22 is at 5V
No
Yes
Waveforms of pin 10 and pin 41 are identical when pin 2 of IC22 is at 5V
No
Yes
Waveforms of pin 11 and pin 42 are identical when pin 3 of IC22 is at 5V
No
Yes
Check CN8.
Replace IC22.
Head interface failure including sector missing
Waveforms of pins 111 through 113 of IC2 are similar to waveforms in Figures H.5(5/6, 6/6)
No
IC2 : 111 (HLATCH)
: 112 (HCLCK)
: 113 (HDATA)
Yes
Check CN12.
Replace IC2.

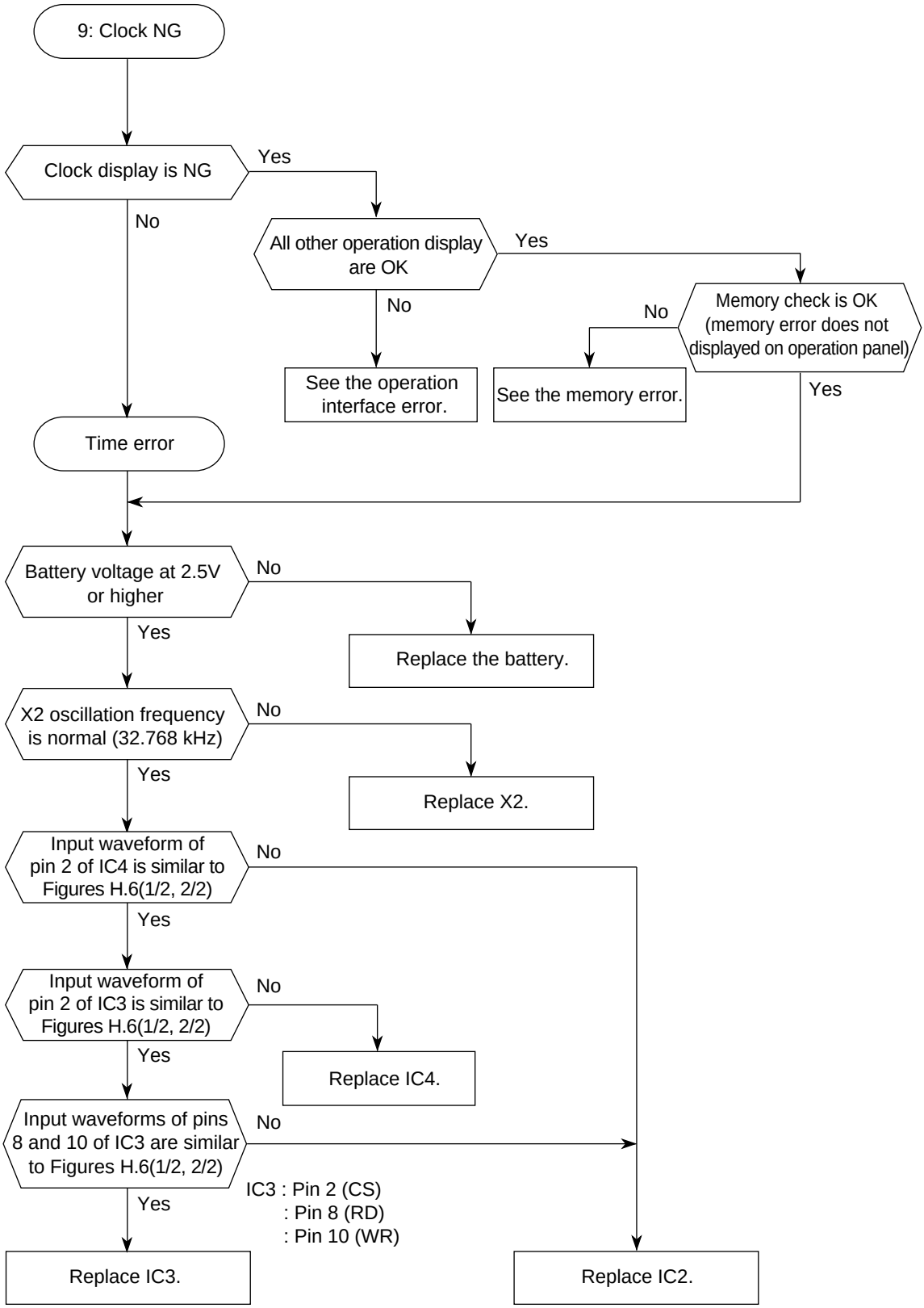
4.1.7 Sending NG


7: Sending NG
Call origination is impossible
Yes
No
Call origination mode is (DP or PB)
DP
PB
Pin 2 of IC2 repeats 5V and 0V cyclically during DP call origination
No
Yes
Replace IC2.
Protocol signal receiving is NG
Yes
No
During protocol signal receiving, sine wave or modulated sine wave input is provided between pins 2 and 3 of IC12
No
Yes
Check CN10.
During protocol signal receiving, sine wave or modulated sine wave input is provided at pin 32 of IC8
No
Yes
Signals cannot be sent.
During protocol signal sending, sine wave or modulated sine wave output is provided between pins 28 and 29 of IC8
No
Yes
Replace IC8.
During protocol signal sending, sine wave or modulated sine wave output is provided at pin 7 of IC12
No
Yes
Check CN10.
Replace IC12.

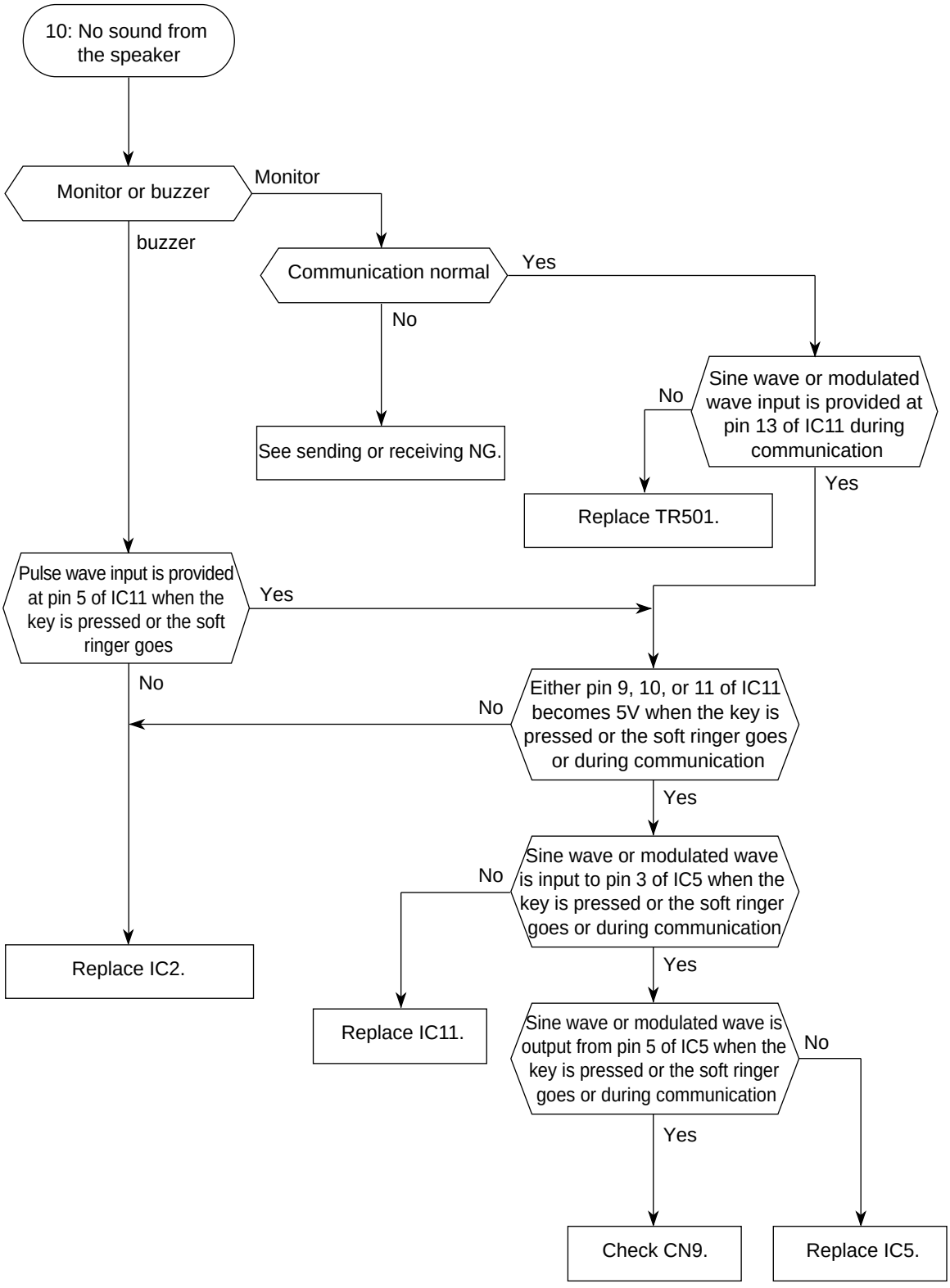
4.1.8 Receiving NG


8: Receiving NG
RING signal cannot be detected
Yes
No
5V and 0V are alternately input to pin 9 of IC14, synchronized with the RING signal
Yes
No
Check CN10.
Pin 195 of IC2 repeats 5V and 0V cyclically, synchronized with the RING signal
No
Yes
Replace IC14.
Replace IC2.
Protocol signal receiving is NG
Yes
No
During protocol signal receiving, sine wave or modulated sine wave input is provided between pins 2 and 3 of IC12
No
Yes
Check CN10.
During protocol signal receiving, sine wave or modulated sine wave output is provided at pin 32 of IC8
No
Yes
Signals cannot be sent.
During protocol signal sending, sine wave or modulated sine wave output is provided between pin 28 and pin 29 of IC8
No
Yes
Replace IC8.
During protocol signal sending, sine wave or modulated sine wave output is provided at pin 7 of IC12
No
Yes
Check CN10.
Replace IC12.

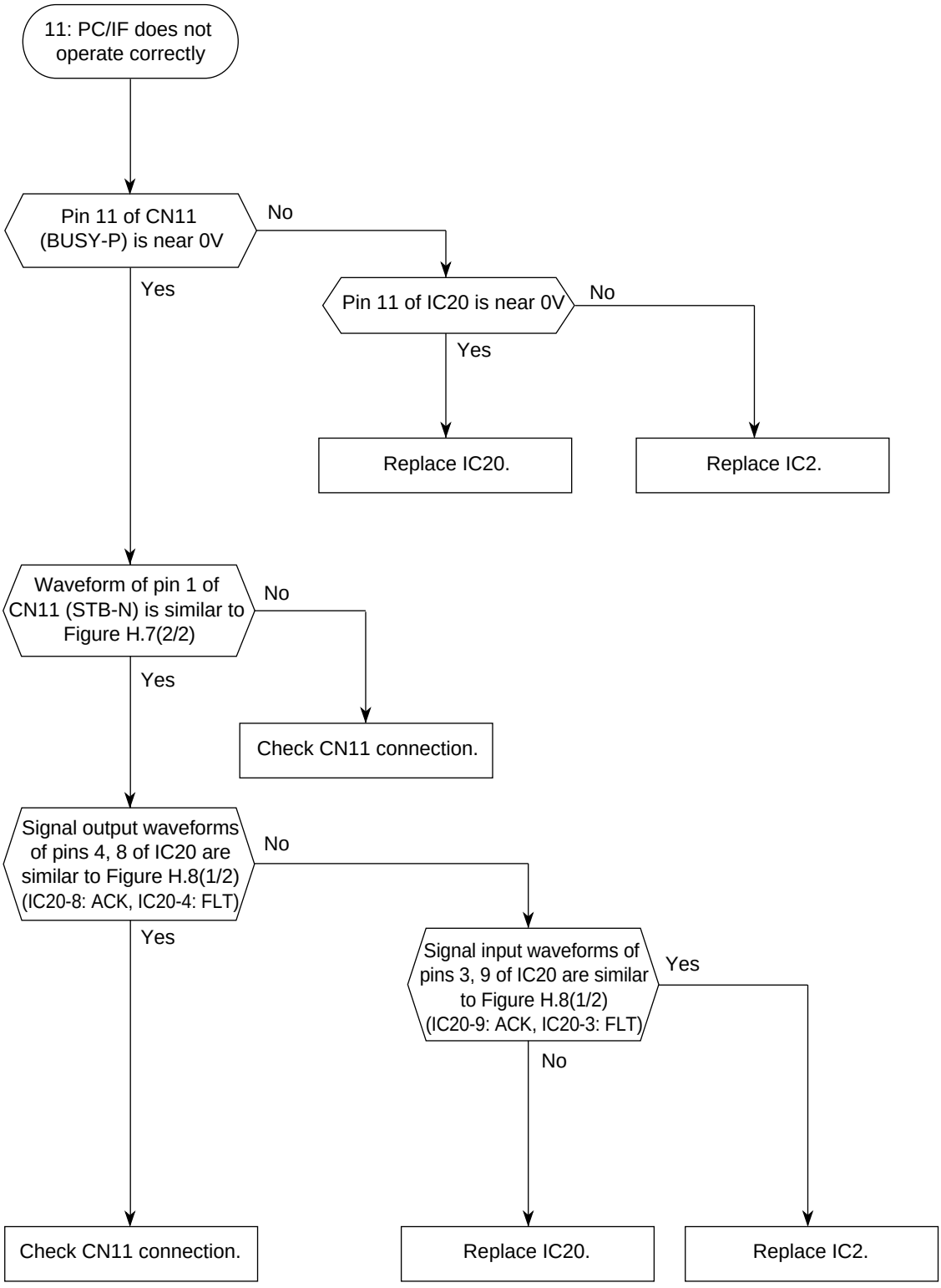
4.1.9 Clock NG


9: Clock NG
Clock display is NG
Yes
No
All other operation display are OK
Yes
No
Memory check is OK (memory error does not displayed on operation panel)
No
Yes
See the operation interface error.
See the memory error.
Time error
Battery voltage at 2.5V or higher
No
Yes
Replace the battery.
X2 oscillation frequency is normal (32.768 kHz)
No
Yes
Replace X2.
Input waveform of pin 2 of IC4 is similar to Figures H.6(1/2, 2/2)
No
Yes
Input waveform of pin 2 of IC3 is similar to Figures H.6(1/2, 2/2)
No
Yes
Replace IC4.
Input waveforms of pins 8 and 10 of IC3 are similar to Figures H.6(1/2, 2/2)
No
Yes
IC3 : Pin 2 (CS)
: Pin 8 (RD)
: Pin 10 (WR)
Replace IC3.
Replace IC2.

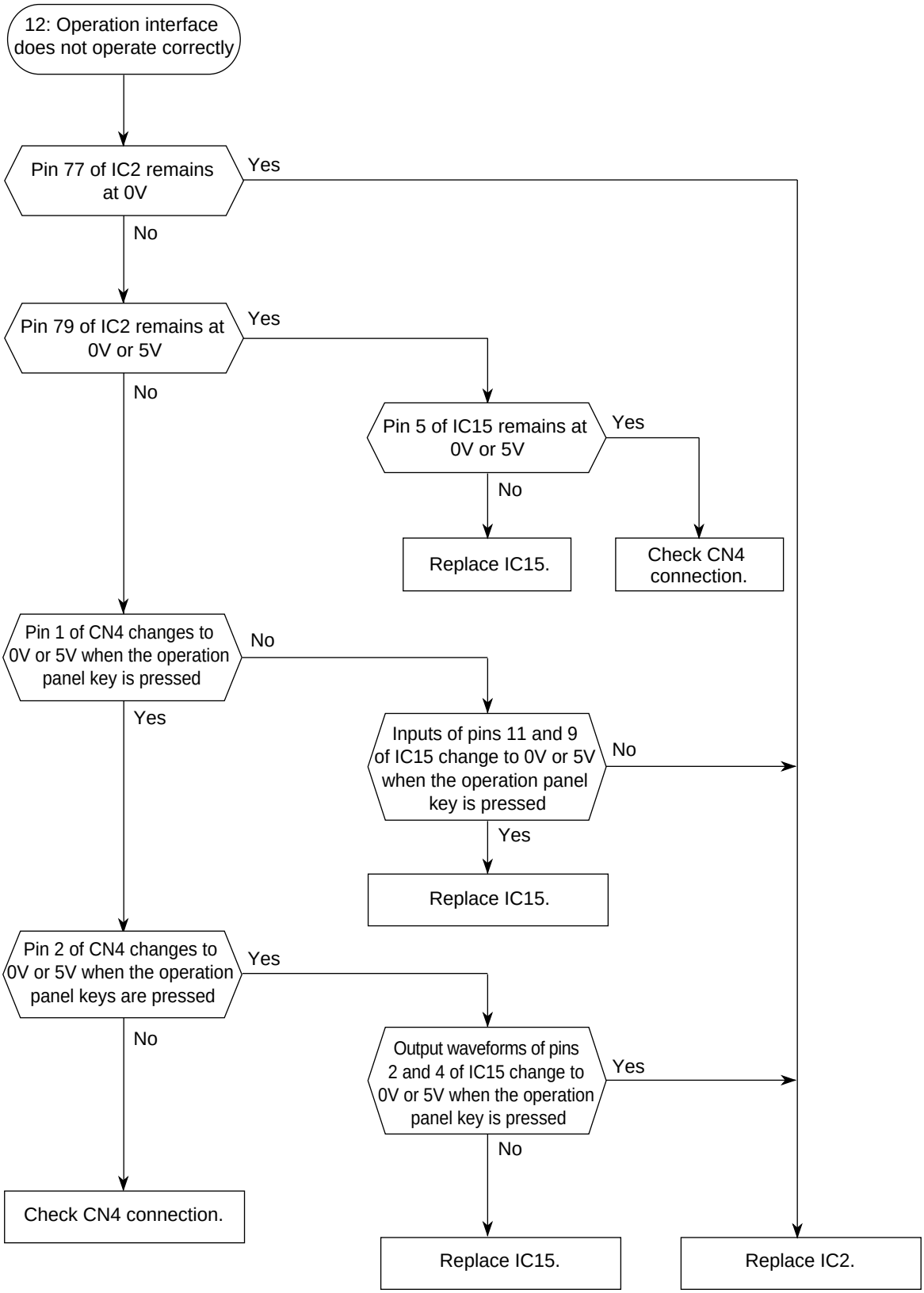
4.1.10 No sound from the speaker


10: No sound from the speaker
Monitor or buzzer
Monitor
buzzer
Communication normal
Yes
No
See sending or receiving NG.
Sine wave or modulated wave input is provided at pin 13 of IC11 during communication
No
Yes
Replace TR501.
Pulse wave input is provided at pin 5 of IC11 when the key is pressed or the soft ringer goes
Yes
No
Either pin 9, 10, or 11 of IC11 becomes 5V when the key is pressed or the soft ringer goes or during communication
No
Yes
Sine wave or modulated wave is input to pin 3 of IC5 when the key is pressed or the soft ringer goes or during communication
No
Yes
Replace IC2.
Replace IC11.
Sine wave or modulated wave is output from pin 5 of IC5 when the key is pressed or the soft ringer goes or during communication
No
Yes
Check CN9.
Replace IC5.

4.1.11 PC/IF not operating correctly

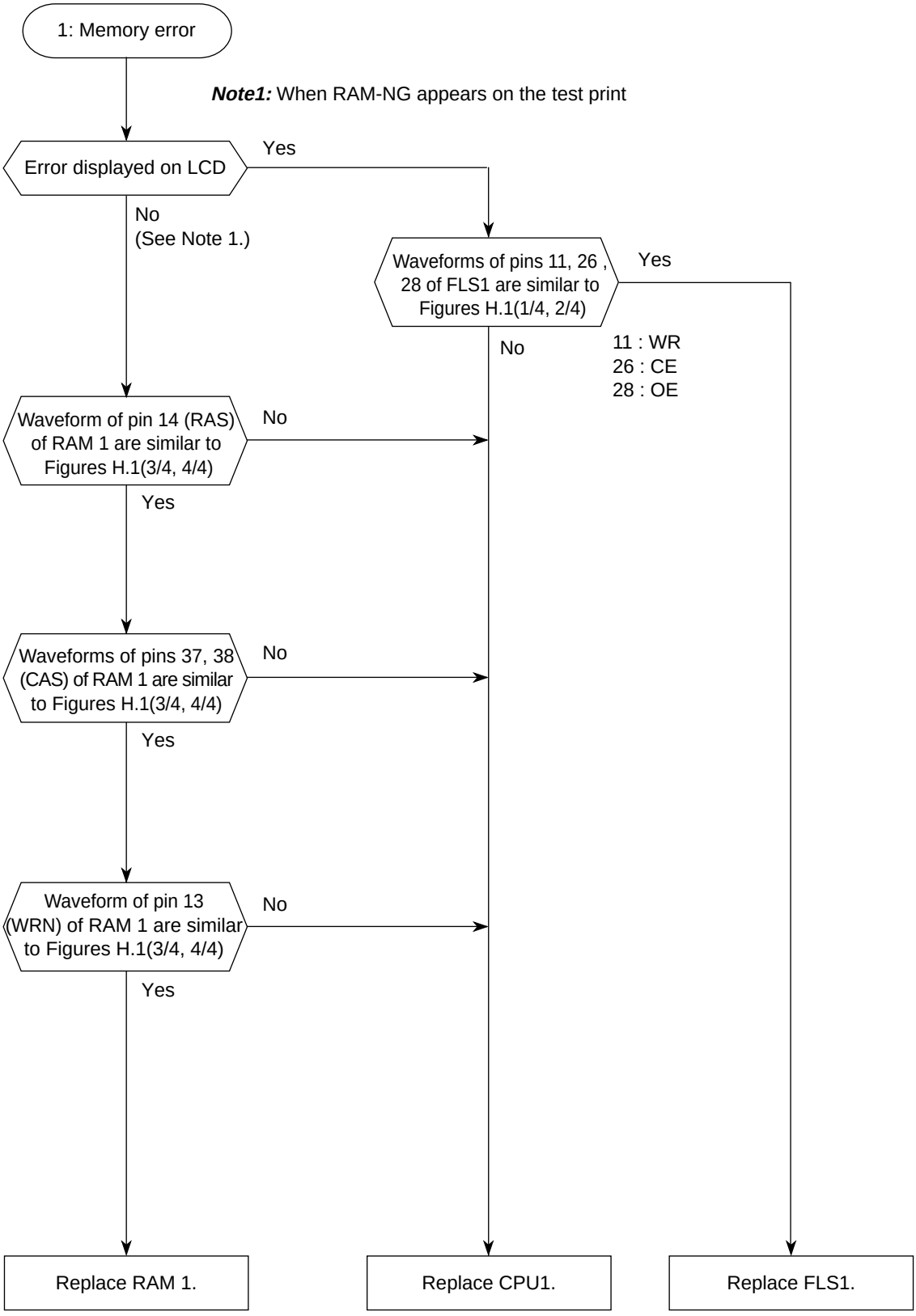

11: PC/IF does not operate correctly
Pin 11 of CN11 (BUSY-P) is near 0V
No
Yes
Pin 11 of IC20 is near 0V
No
Yes
Replace IC20.
Replace IC2.
Waveform of pin 1 of CN11 (STB-N) is similar to Figure H.7(2/2)
No
Yes
Check CN11 connection.
Signal output waveforms of pins 4, 8 of IC20 are similar to Figure H.8(1/2) (IC20-8: ACK, IC20-4: FLT)
No
Yes
Signal input waveforms of pins 3, 9 of IC20 are similar to Figure H.8(1/2) (IC20-9: ACK, IC20-3: FLT)
Yes
No
Check CN11 connection.
Replace IC20.
Replace IC2.

4.1.12 Operation interface not operating correctly

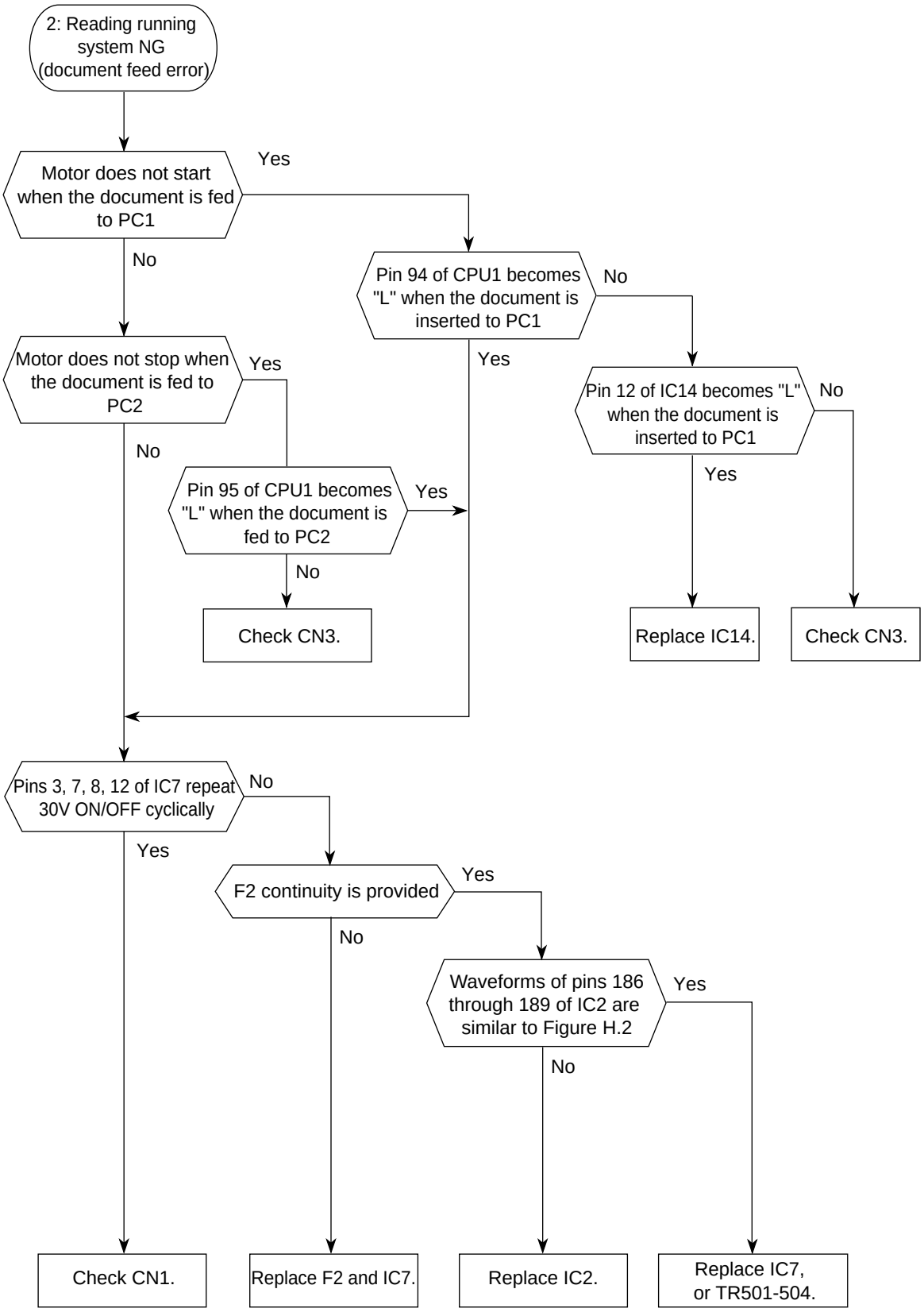

12: Operation interface does not operate correctly
Pin 77 of IC2 remains at 0V
Yes
No
Pin 79 of IC2 remains at 0V or 5V
Yes
No
Pin 5 of IC15 remains at 0V or 5V
Yes
No
Replace IC15.
Check CN4 connection.
Pin 1 of CN4 changes to 0V or 5V when the operation panel key is pressed
No
Yes
Inputs of pins 11 and 9 of IC15 change to 0V or 5V when the operation panel key is pressed
No
Yes
Replace IC15.
Pin 2 of CN4 changes to 0V or 5V when the operation panel keys are pressed
Yes
No
Output waveforms of pins 2 and 4 of IC15 change to 0V or 5V when the operation panel key is pressed
Yes
No
Check CN4 connection.
Replace IC15.
Replace IC2.

4.2 R46 Board (OKIOFFICE87)

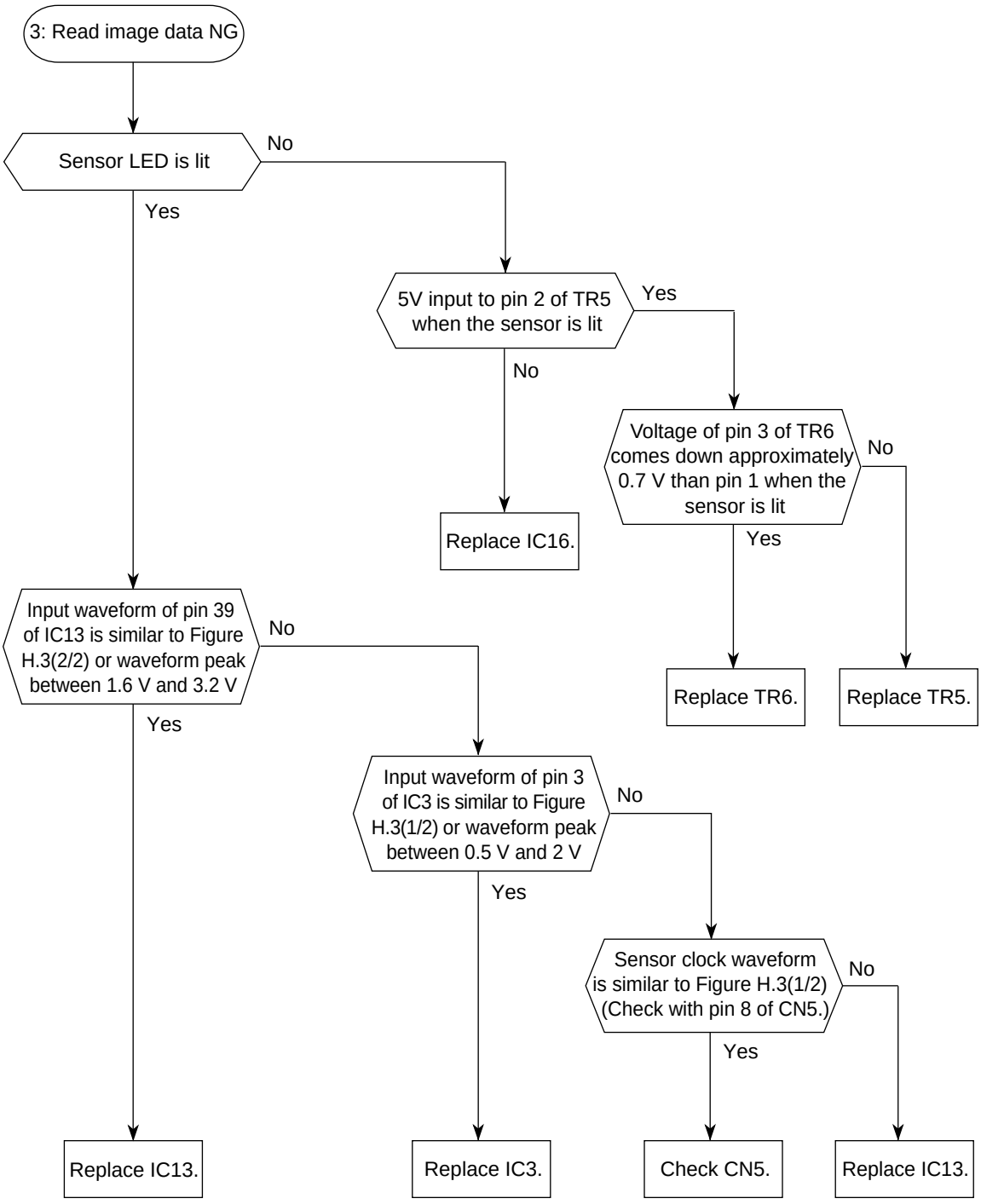
4.2.1 Memory error


1: Memory error
Note1: When RAM-NG appears on the test print
Error displayed on LCD
Yes
No
(See Note 1.)
Waveforms of pins 11, 26 , 28 of FLS1 are similar to Figures H.1(1/4, 2/4)
Yes
No
11 : WR
26 : CE
28 : OE
Waveform of pin 14 (RAS) of RAM 1 are similar to Figures H.1(3/4, 4/4)
No
Yes
Waveforms of pins 37, 38 (CAS) of RAM 1 are similar to Figures H.1(3/4, 4/4)
No
Yes
Waveform of pin 13 (WRN) of RAM 1 are similar to Figures H.1(3/4, 4/4)
No
Yes
Replace RAM 1.
Replace CPU1.
Replace FLS1.

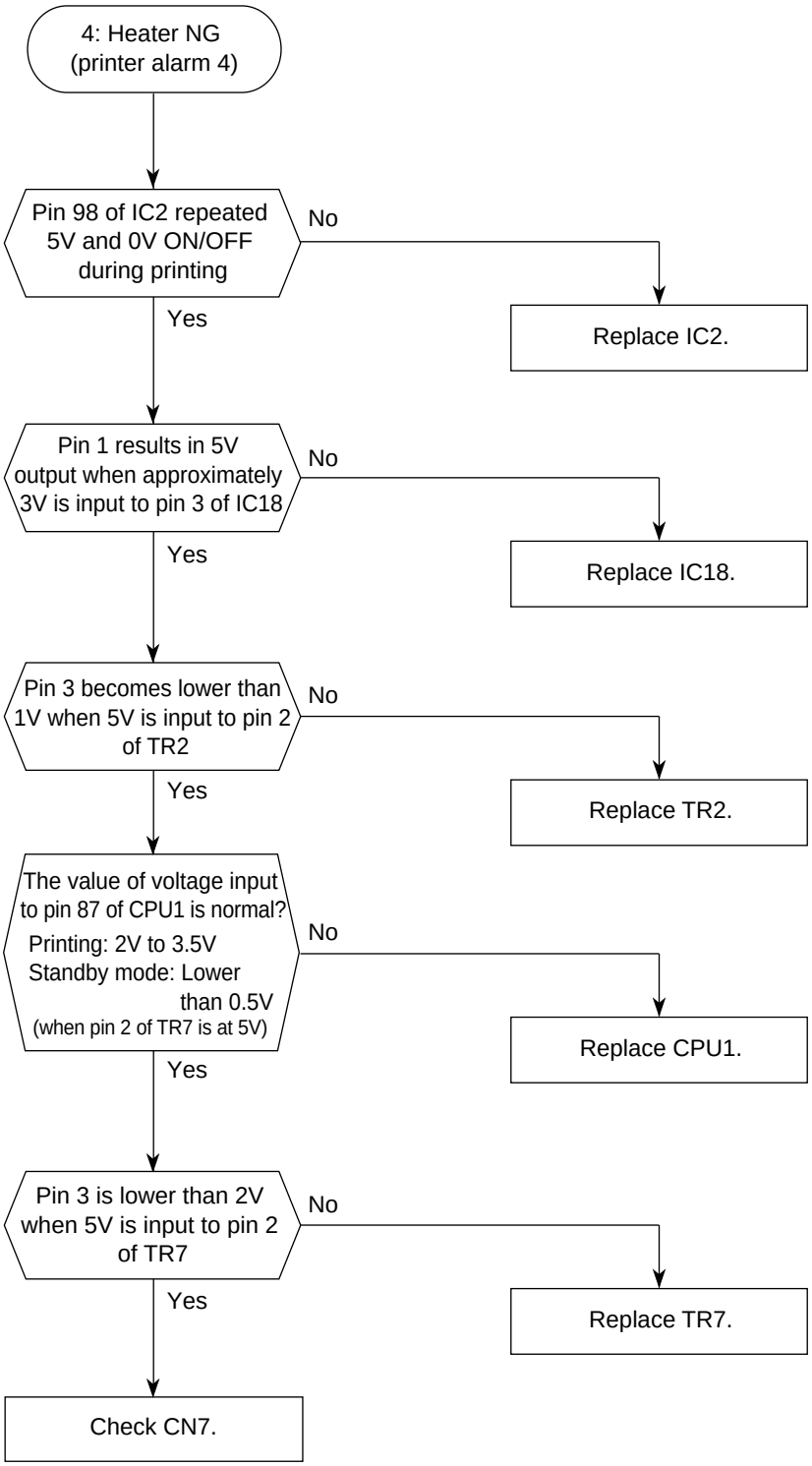
4.2.2 Reading running system NG


2: Reading running system NG (document feed error)
Motor does not start when the document is fed to PC1
Yes
No
Pin 94 of CPU1 becomes "L" when the document is inserted to PC1
No
Yes
Motor does not stop when the document is fed to PC2
Yes
No
Pin 12 of IC14 becomes "L" when the document is inserted to PC1
No
Yes
Pin 95 of CPU1 becomes "L" when the document is fed to PC2
Yes
No
Check CN3.
Replace IC14.
Check CN3.
Pins 3, 7, 8, 12 of IC7 repeat 30V ON/OFF cyclically
No
Yes
F2 continuity is provided
Yes
No
Waveforms of pins 186 through 189 of IC2 are similar to Figure H.2
Yes
No
Check CN1.
Replace F2 and IC7.
Replace IC2.
Replace IC7, or TR501-504.

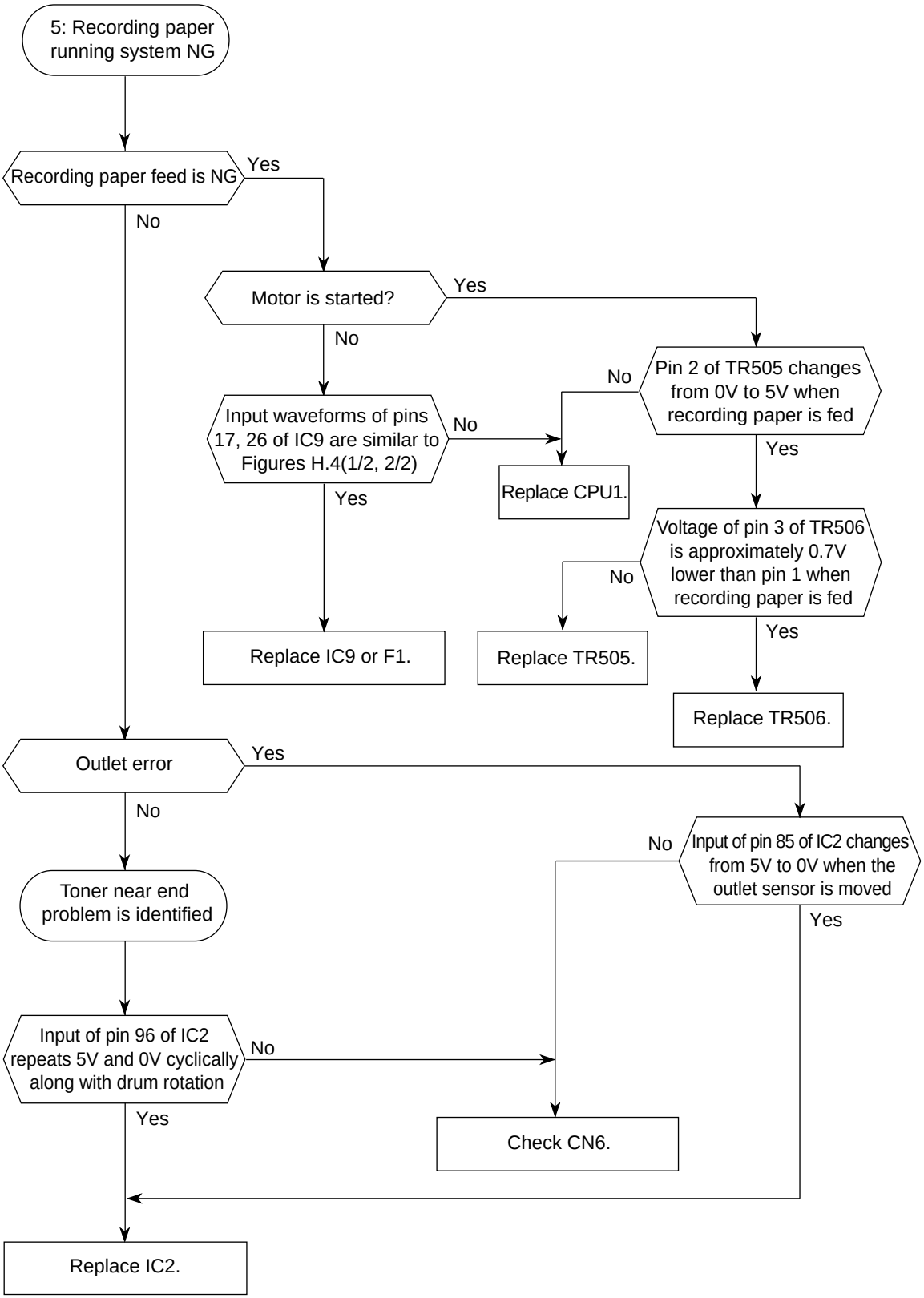
4.2.3 Read image data NG


3: Read image data NG
Sensor LED is lit
No
Yes
5V input to pin 2 of TR5 when the sensor is lit
Yes
No
Replace IC16.
Voltage of pin 3 of TR6 comes down approximately 0.7 V than pin 1 when the sensor is lit
No
Yes
Replace TR6.
Replace TR5.
Input waveform of pin 39 of IC13 is similar to Figure H.3(2/2) or waveform peak between 1.6 V and 3.2 V
No
Yes
Input waveform of pin 3 of IC3 is similar to Figure H.3(1/2) or waveform peak between 0.5 V and 2 V
No
Yes
Sensor clock waveform is similar to Figure H.3(1/2) (Check with pin 8 of CN5.)
No
Yes
Replace IC13.
Replace IC3.
Check CN5.
Replace IC13.

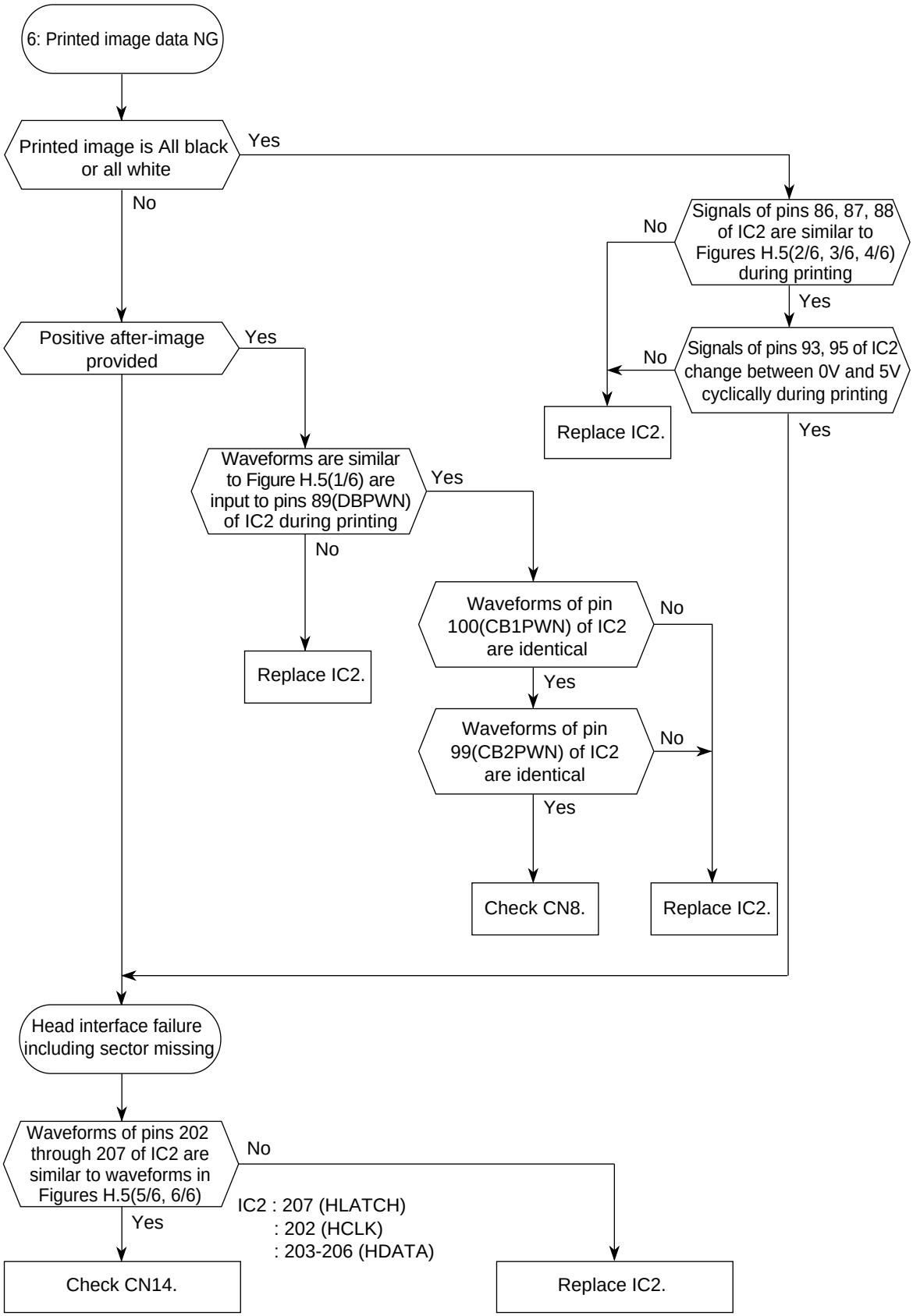
4.2.4 Heater NG


4: Heater NG
(printer alarm 4)
Pin 98 of IC2 repeated 5V and 0V ON/OFF during printing
No
Replace IC2.
Yes
Pin 1 results in 5V output when approximately 3V is input to pin 3 of IC18
No
Replace IC18.
Yes
Pin 3 becomes lower than 1V when 5V is input to pin 2 of TR2
No
Replace TR2.
Yes
The value of voltage input to pin 87 of CPU1 is normal?
Printing: 2V to 3.5V
Standby mode: Lower than 0.5V
(when pin 2 of TR7 is at 5V)
No
Replace CPU1.
Yes
Pin 3 is lower than 2V when 5V is input to pin 2 of TR7
No
Replace TR7.
Yes
Check CN7.

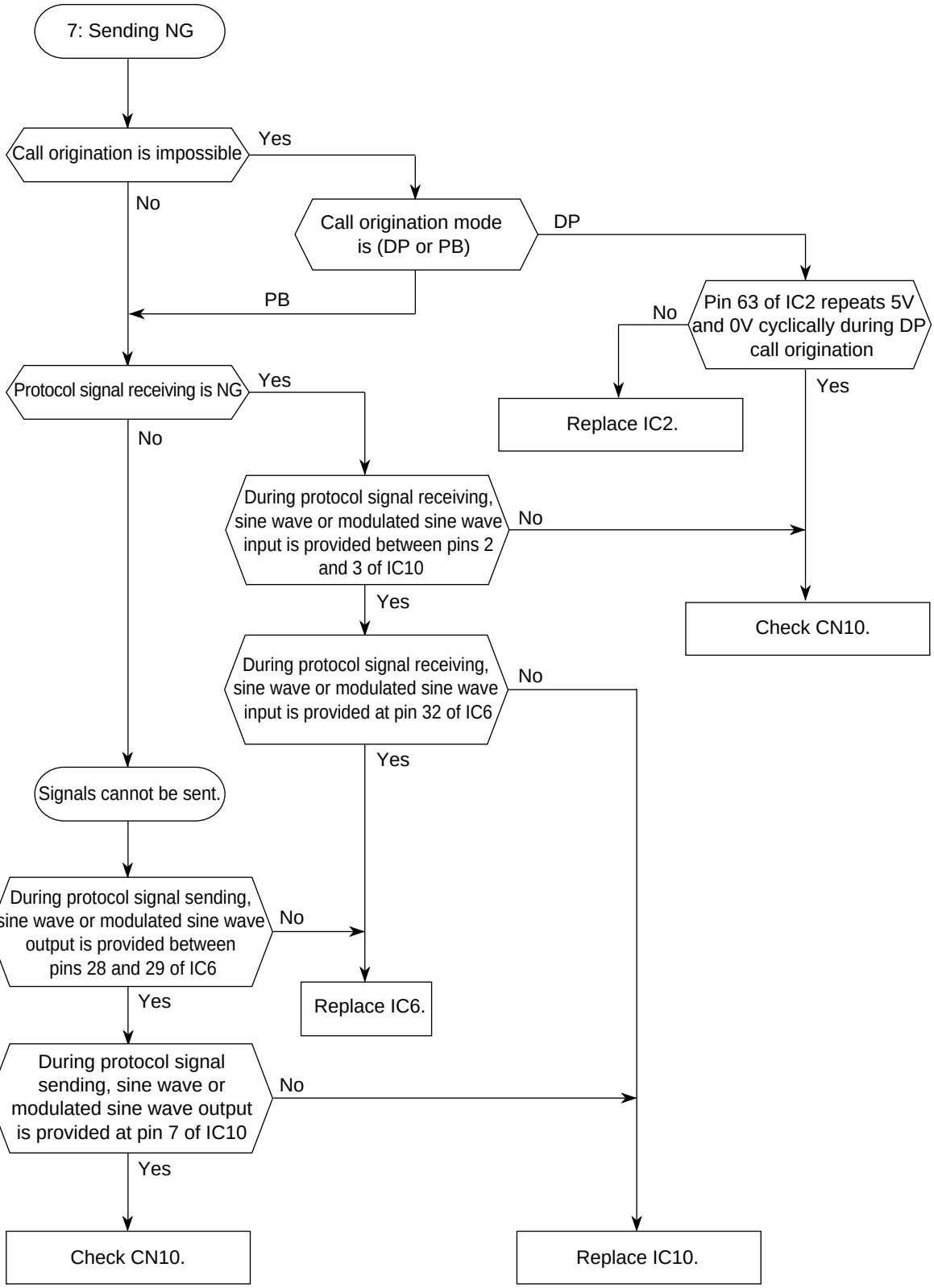
4.2.5 Recording paper running system NG


5: Recording paper running system NG
Recording paper feed is NG
Yes
No
Motor is started?
Yes
No
Input waveforms of pins 17, 26 of IC9 are similar to Figures H.4(1/2, 2/2)
No
Yes
Replace CPU1.
Pin 2 of TR505 changes from 0V to 5V when recording paper is fed
No
Yes
Voltage of pin 3 of TR506 is approximately 0.7V lower than pin 1 when recording paper is fed
No
Yes
Replace IC9 or F1.
Replace TR505.
Replace TR506.
Outlet error
Yes
No
Toner near end problem is identified
Input of pin 85 of IC2 changes from 5V to 0V when the outlet sensor is moved
No
Yes
Input of pin 96 of IC2 repeats 5V and 0V cyclically along with drum rotation
No
Yes
Check CN6.
Replace IC2.

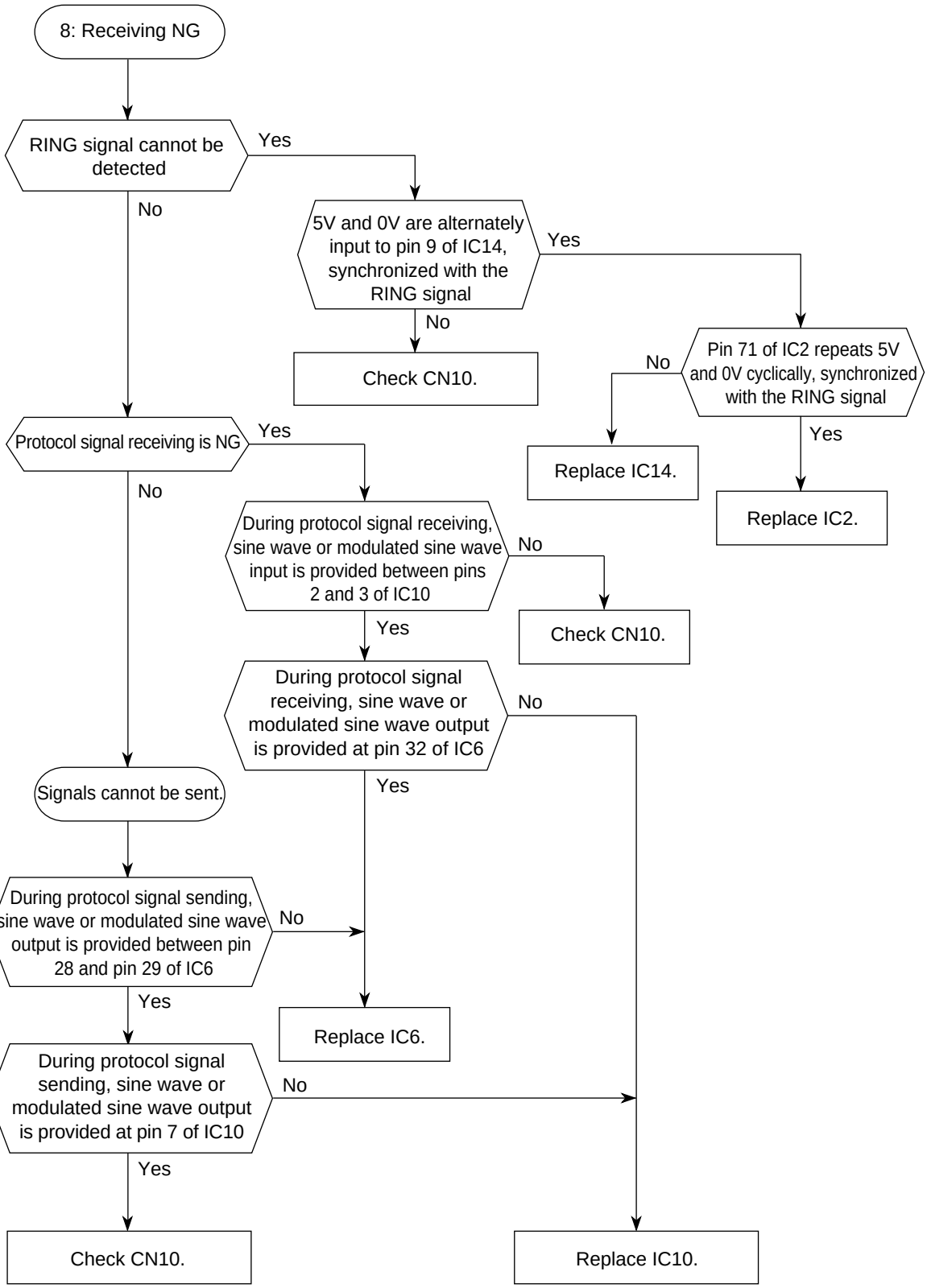
4.2.6 Printed image data NG


6: Printed image data NG
Printed image is All black or all white
Yes
No
Signals of pins 86, 87, 88 of IC2 are similar to Figures H.5(2/6, 3/6, 4/6) during printing
No
Yes
Signals of pins 93, 95 of IC2 change between 0V and 5V cyclically during printing
No
Yes
Replace IC2.
Positive after-image provided
Yes
Waveforms are similar to Figure H.5(1/6) are input to pins 89(DBPWN) of IC2 during printing
Yes
No
Replace IC2.
Waveforms of pin 100(CB1PWN) of IC2 are identical
No
Yes
Waveforms of pin 99(CB2PWN) of IC2 are identical
No
Yes
Check CN8.
Replace IC2.
Head interface failure including sector missing
Waveforms of pins 202 through 207 of IC2 are similar to waveforms in Figures H.5(5/6, 6/6)
No
Yes
IC2 : 207 (HLATCH)
: 202 (HCLK)
: 203-206 (HDATA)
Check CN14.
Replace IC2.

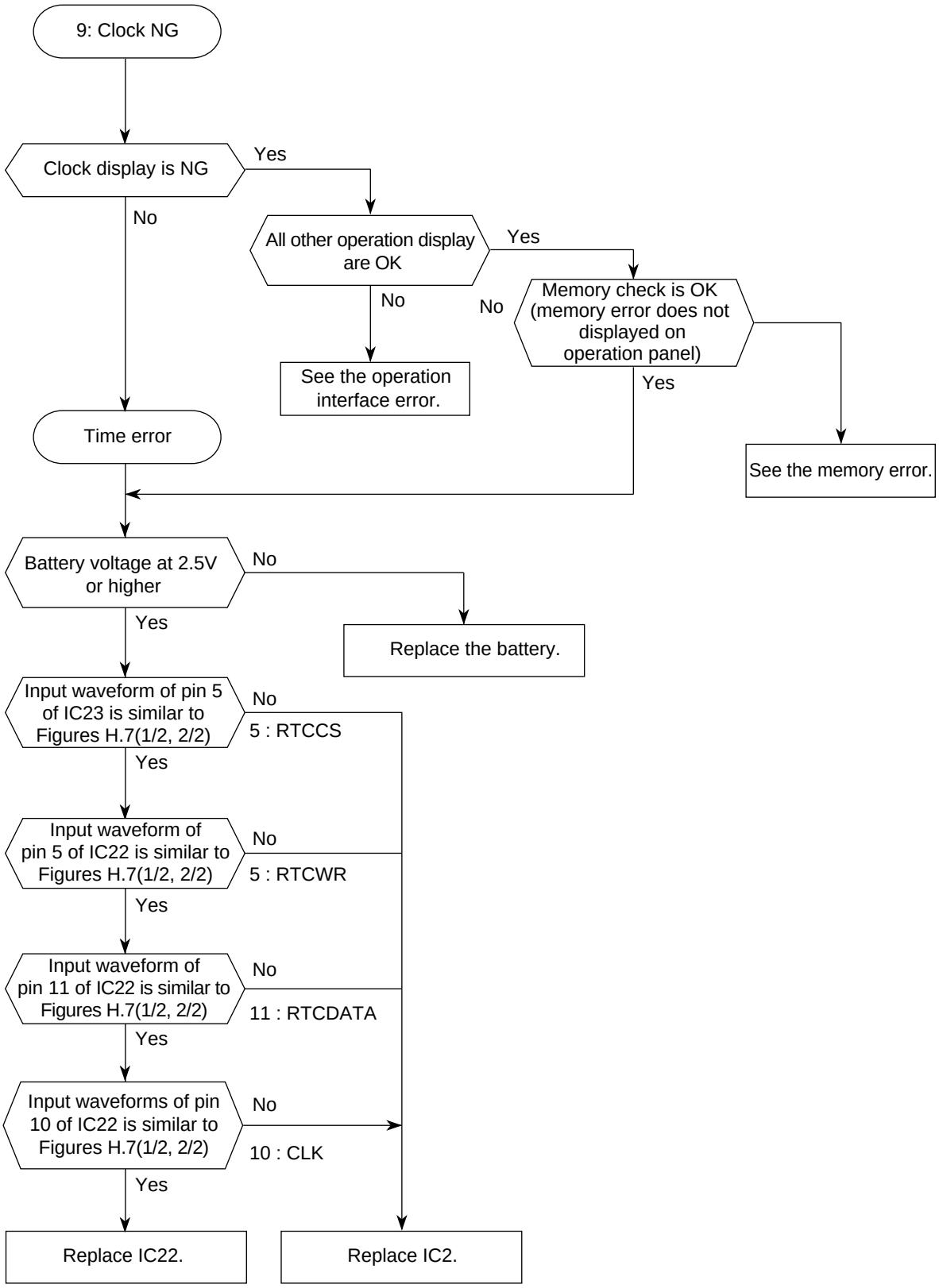
4.2.7 Sending NG


7: Sending NG
Call origination is impossible
Yes
No
Call origination mode is (DP or PB)
DP
PB
Pin 63 of IC2 repeats 5V and 0V cyclically during DP call origination
No
Yes
Replace IC2.
Protocol signal receiving is NG
Yes
No
During protocol signal receiving, sine wave or modulated sine wave input is provided between pins 2 and 3 of IC10
No
Yes
Check CN10.
During protocol signal receiving, sine wave or modulated sine wave input is provided at pin 32 of IC6
No
Yes
Signals cannot be sent.
During protocol signal sending, sine wave or modulated sine wave output is provided between pins 28 and 29 of IC6
No
Yes
Replace IC6.
During protocol signal sending, sine wave or modulated sine wave output is provided at pin 7 of IC10
No
Yes
Check CN10.
Replace IC10.

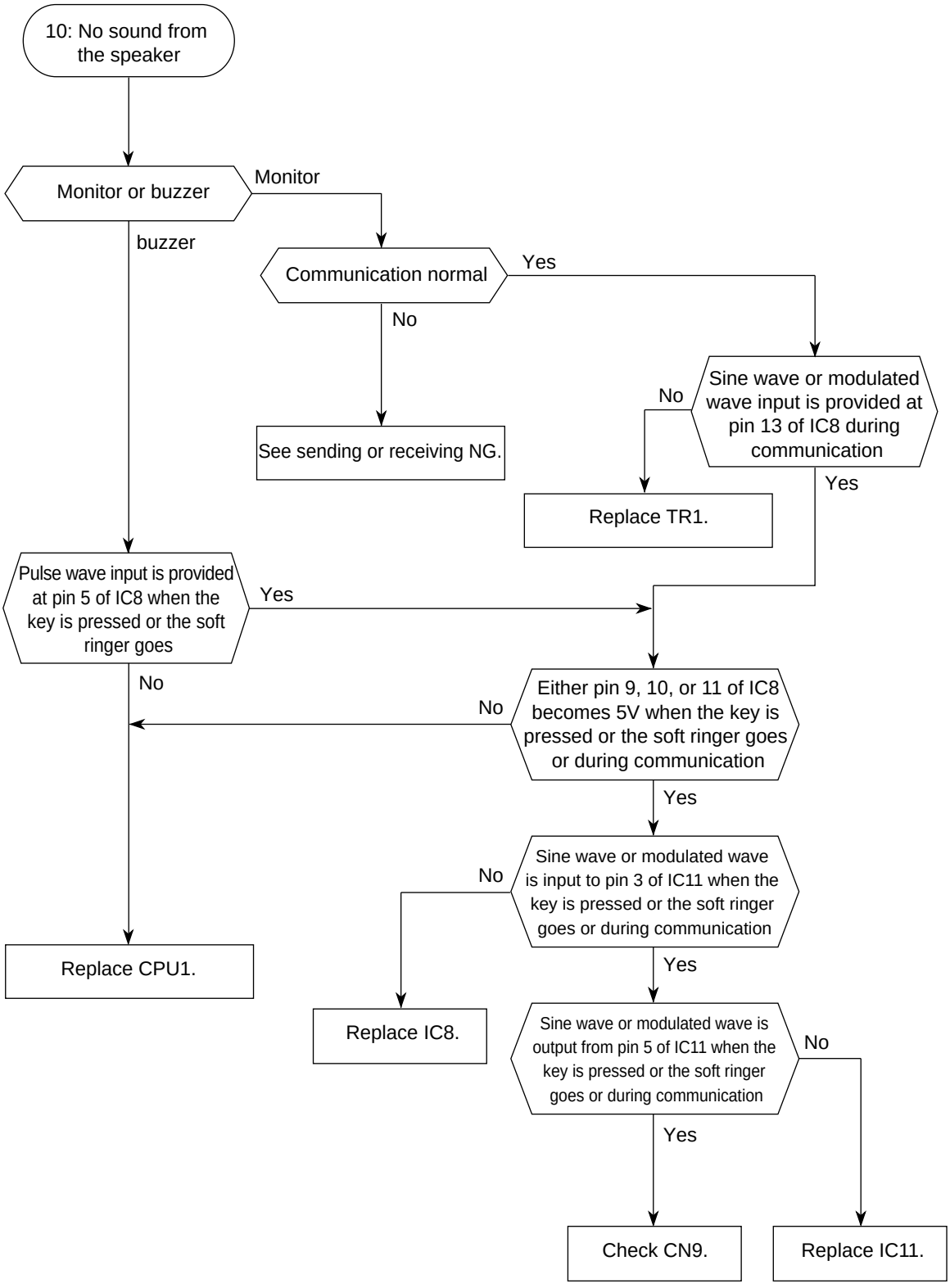
4.2.8 Receiving NG


8: Receiving NG
RING signal cannot be detected
Yes
No
5V and 0V are alternately input to pin 9 of IC14, synchronized with the RING signal
Yes
No
Check CN10.
Pin 71 of IC2 repeats 5V and 0V cyclically, synchronized with the RING signal
No
Yes
Replace IC14.
Replace IC2.
Protocol signal receiving is NG
Yes
No
During protocol signal receiving, sine wave or modulated sine wave input is provided between pins 2 and 3 of IC10
No
Yes
Check CN10.
During protocol signal receiving, sine wave or modulated sine wave output is provided at pin 32 of IC6
No
Yes
Signals cannot be sent.
During protocol signal sending, sine wave or modulated sine wave output is provided between pin 28 and pin 29 of IC6
No
Yes
Replace IC6.
During protocol signal sending, sine wave or modulated sine wave output is provided at pin 7 of IC10
No
Yes
Check CN10.
Replace IC10.

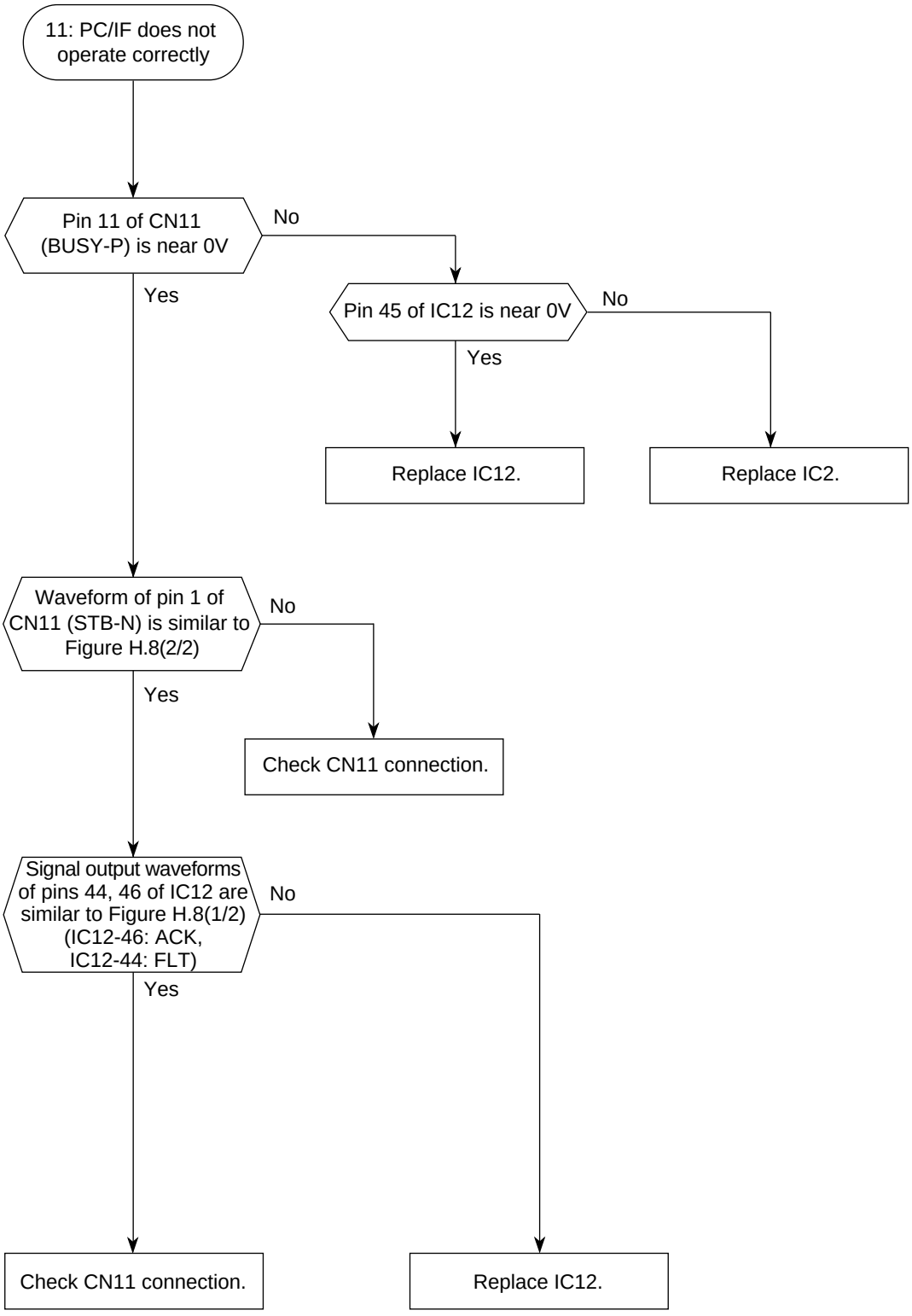
4.2.9 Clock NG


9: Clock NG
Clock display is NG
Yes
No
All other operation display are OK
Yes
No
No
Memory check is OK (memory error does not displayed on operation panel)
Yes
See the operation interface error.
See the memory error.
Time error
Battery voltage at 2.5V or higher
No
Yes
Replace the battery.
Input waveform of pin 5 of IC23 is similar to Figures H.7(1/2, 2/2)
No
5 : RTCCS
Yes
Input waveform of pin 5 of IC22 is similar to Figures H.7(1/2, 2/2)
No
5 : RTCWR
Yes
Input waveform of pin 11 of IC22 is similar to Figures H.7(1/2, 2/2)
No
11 : RTCDATA
Yes
Input waveforms of pin 10 of IC22 is similar to Figures H.7(1/2, 2/2)
No
10 : CLK
Yes
Replace IC22.
Replace IC2.

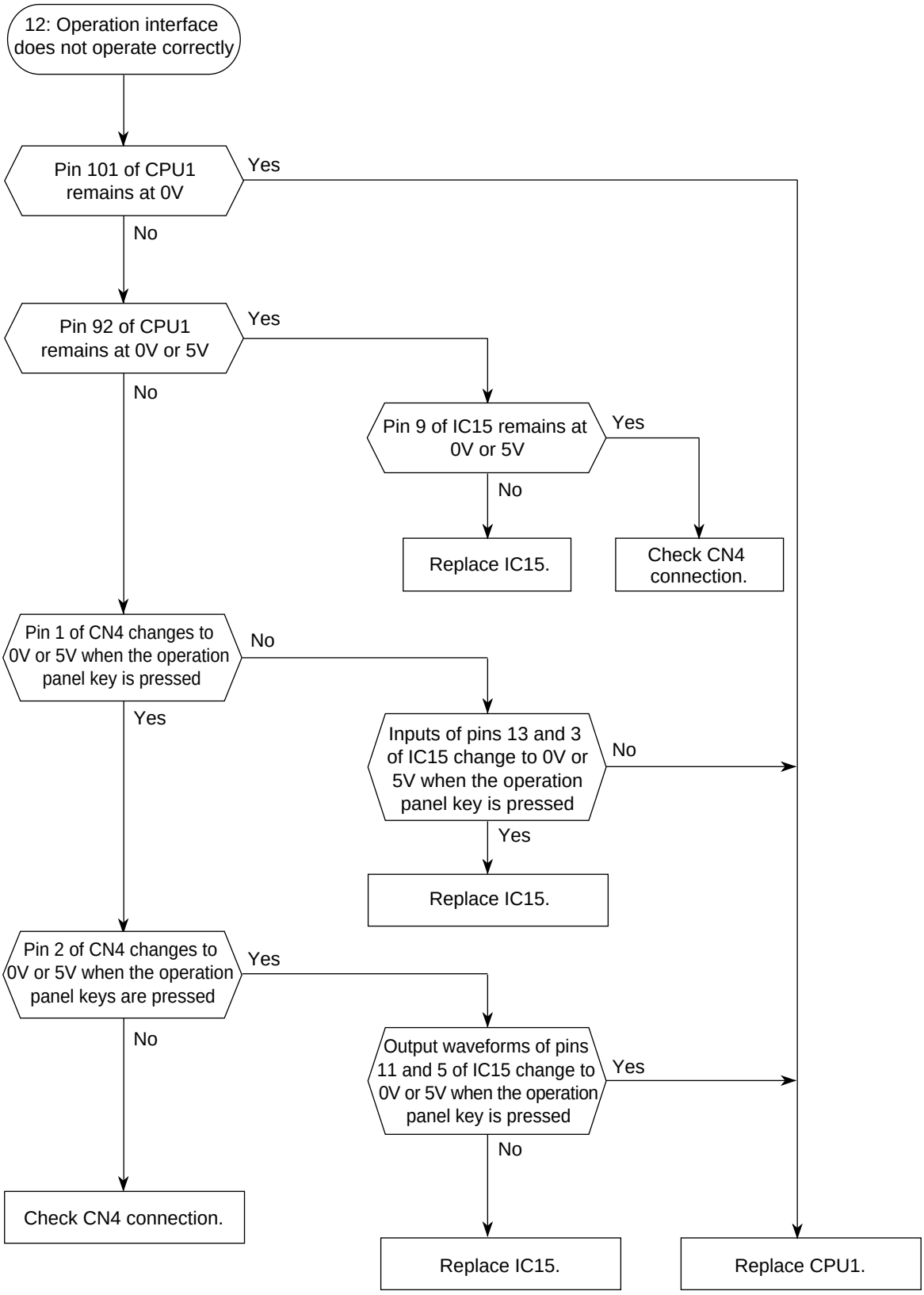
4.2.10 No sound from the speaker


10: No sound from the speaker
Monitor or buzzer
Monitor
buzzer
Communication normal
Yes
No
See sending or receiving NG.
No
Sine wave or modulated wave input is provided at pin 13 of IC8 during communication
Yes
Replace TR1.
Pulse wave input is provided at pin 5 of IC8 when the key is pressed or the soft ringer goes
Yes
No
No
Either pin 9, 10, or 11 of IC8 becomes 5V when the key is pressed or the soft ringer goes or during communication
Yes
Replace CPU1.
No
Sine wave or modulated wave is input to pin 3 of IC11 when the key is pressed or the soft ringer goes or during communication
Yes
Replace IC8.
Sine wave or modulated wave is output from pin 5 of IC11 when the key is pressed or the soft ringer goes or during communication
No
Yes
Check CN9.
Replace IC11.

4.2.11 PC/IF not operating correctly

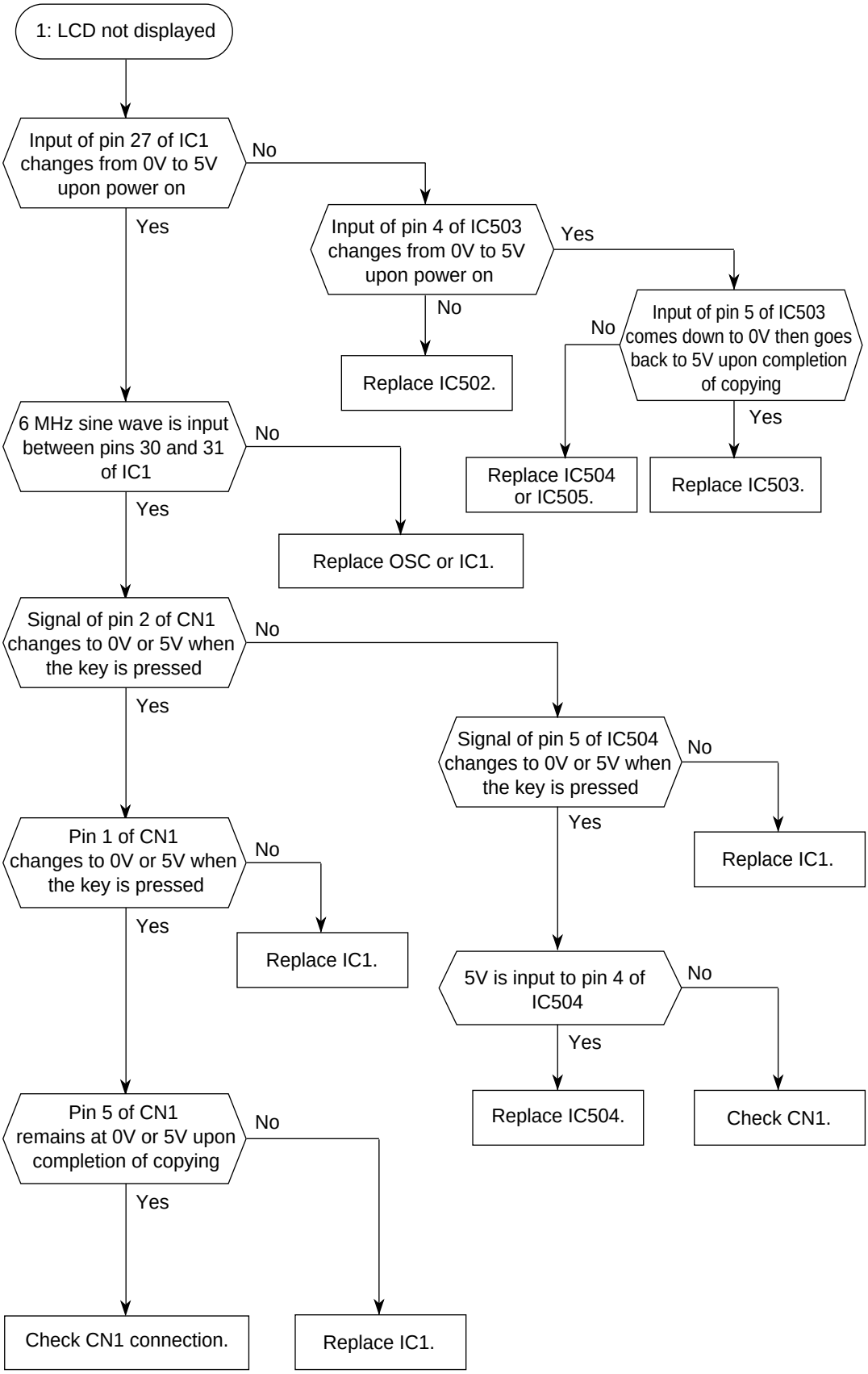


4.2.12 Operation interface not operating correctly

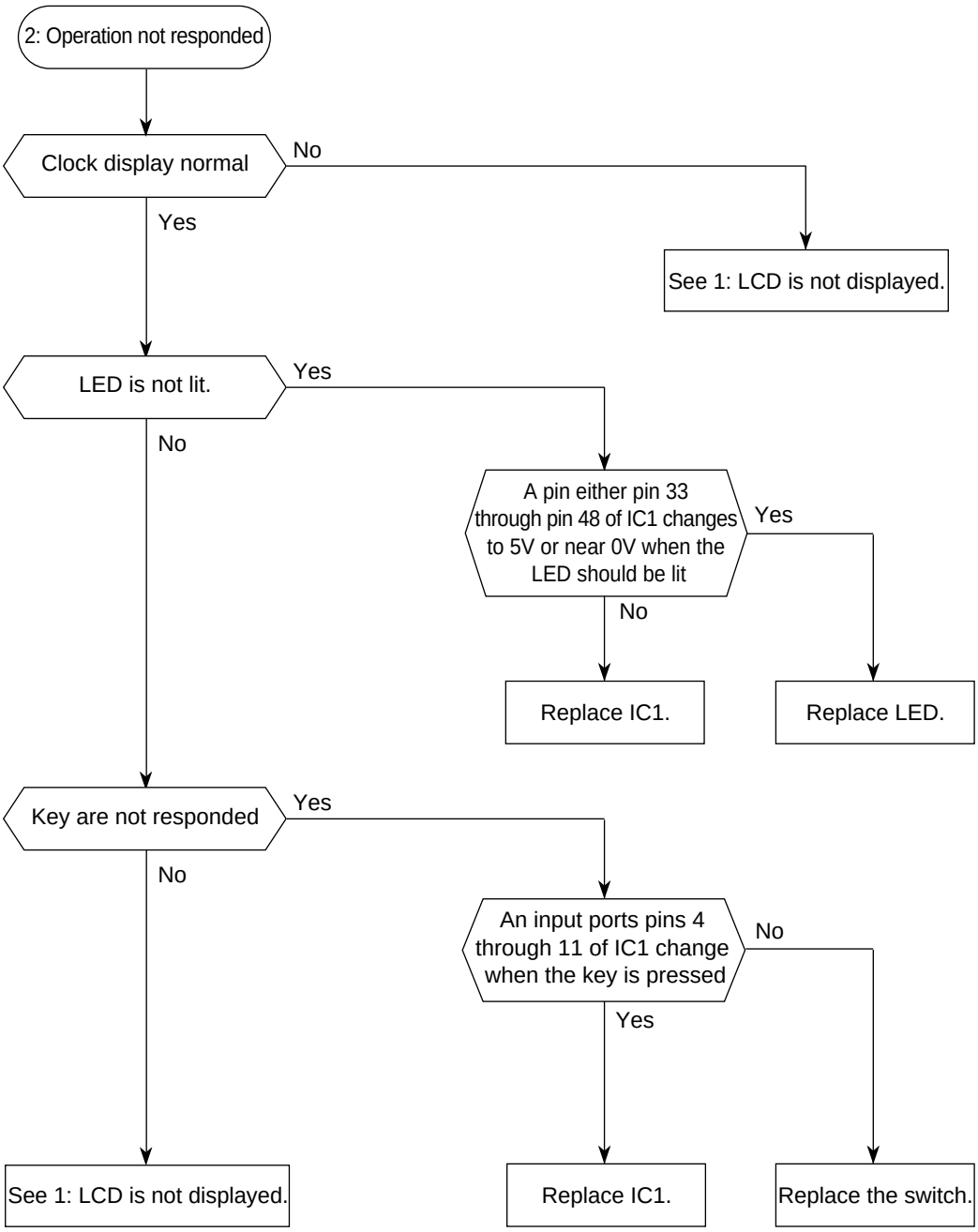

12: Operation interface does not operate correctly
Pin 101 of CPU1 remains at 0V
Yes
No
Pin 92 of CPU1 remains at 0V or 5V
Yes
No
Pin 9 of IC15 remains at 0V or 5V
Yes
No
Replace IC15.
Check CN4 connection.
Pin 1 of CN4 changes to 0V or 5V when the operation panel key is pressed
No
Yes
Inputs of pins 13 and 3 of IC15 change to 0V or 5V when the operation panel key is pressed
No
Yes
Replace IC15.
Pin 2 of CN4 changes to 0V or 5V when the operation panel keys are pressed
Yes
No
Output waveforms of pins 11 and 5 of IC15 change to 0V or 5V when the operation panel key is pressed
Yes
No
Check CN4 connection.
Replace IC15.
Replace CPU1.

4.3 04W Board

4.3.1 LCD display NG

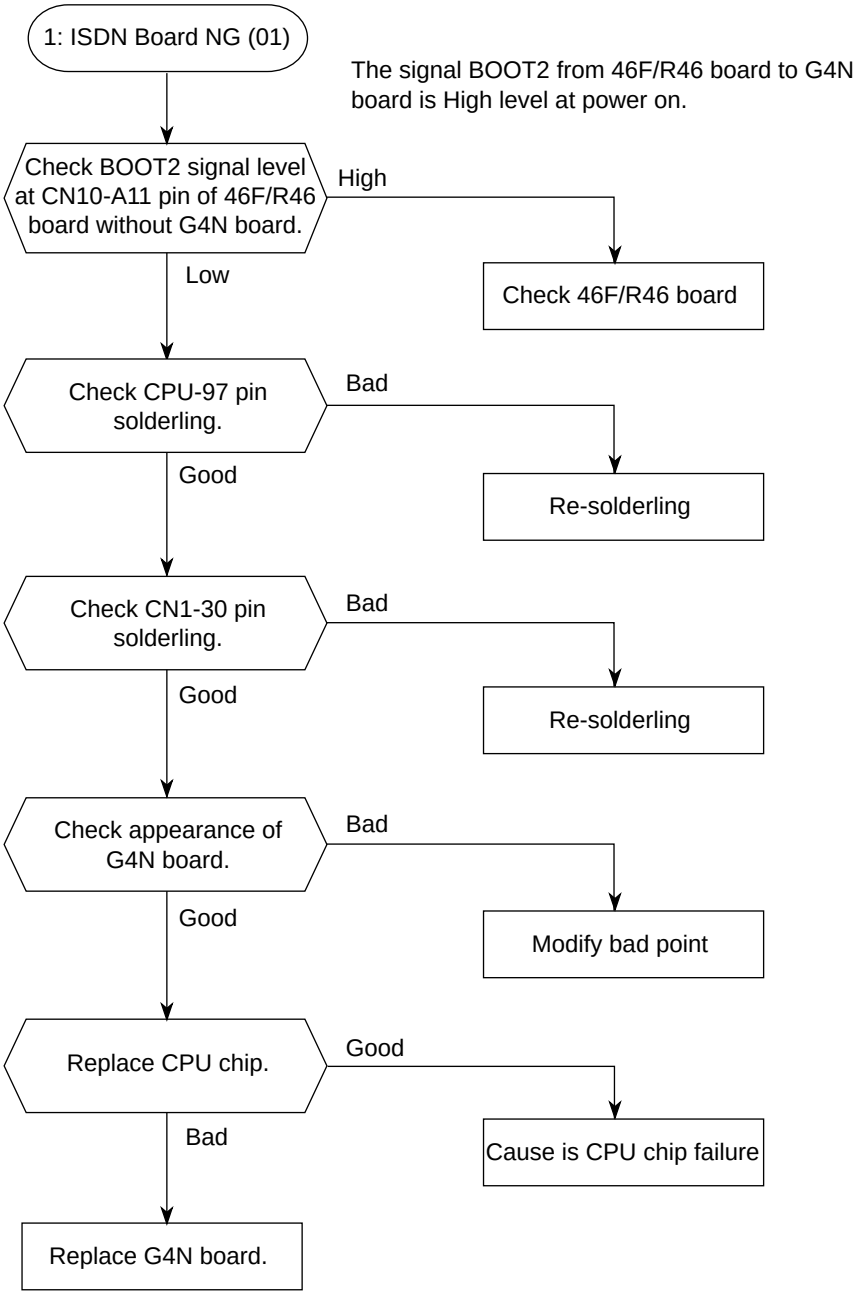

1: LCD not displayed
Input of pin 27 of IC1 changes from 0V to 5V upon power on
No
Yes
Input of pin 4 of IC503 changes from 0V to 5V upon power on
Yes
No
Replace IC502.
Input of pin 5 of IC503 comes down to 0V then goes back to 5V upon completion of copying
No
Yes
Replace IC504 or IC505.
Replace IC503.
6 MHz sine wave is input between pins 30 and 31 of IC1
No
Yes
Replace OSC or IC1.
Signal of pin 2 of CN1 changes to 0V or 5V when the key is pressed
No
Yes
Signal of pin 5 of IC504 changes to 0V or 5V when the key is pressed
No
Yes
Replace IC1.
Pin 1 of CN1 changes to 0V or 5V when the key is pressed
No
Yes
Replace IC1.
5V is input to pin 4 of IC504
No
Yes
Replace IC504.
Check CN1.
Pin 5 of CN1 remains at 0V or 5V upon completion of copying
No
Yes
Check CN1 connection.
Replace IC1.

4.3.2 Operation not responded

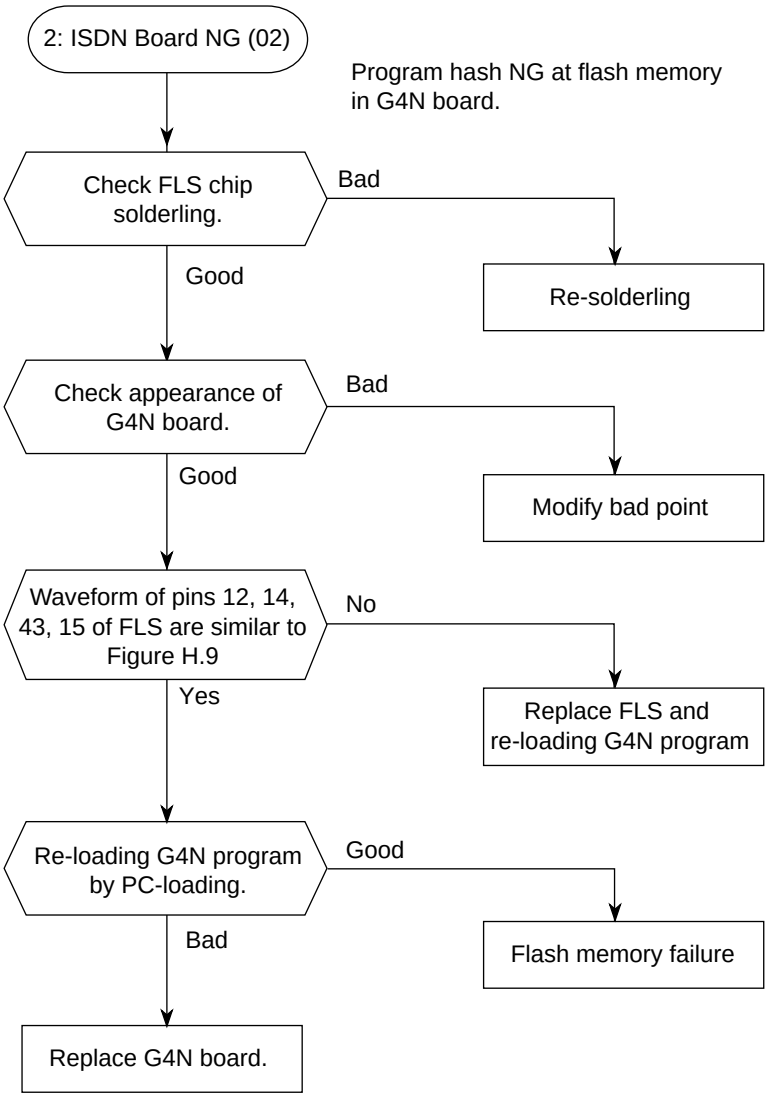


4.4 G4N Board

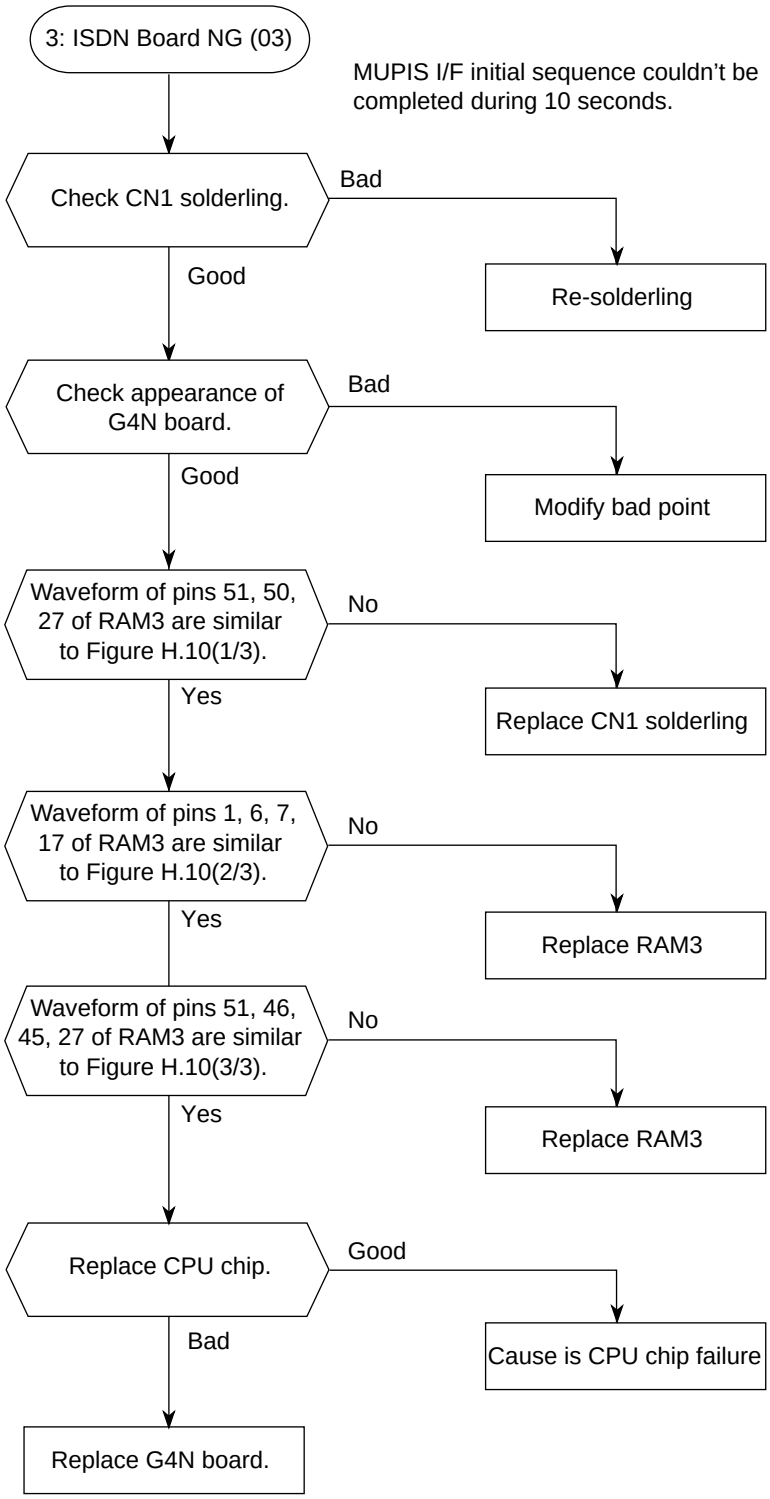
4.4.1 ISDN Board NG (01)



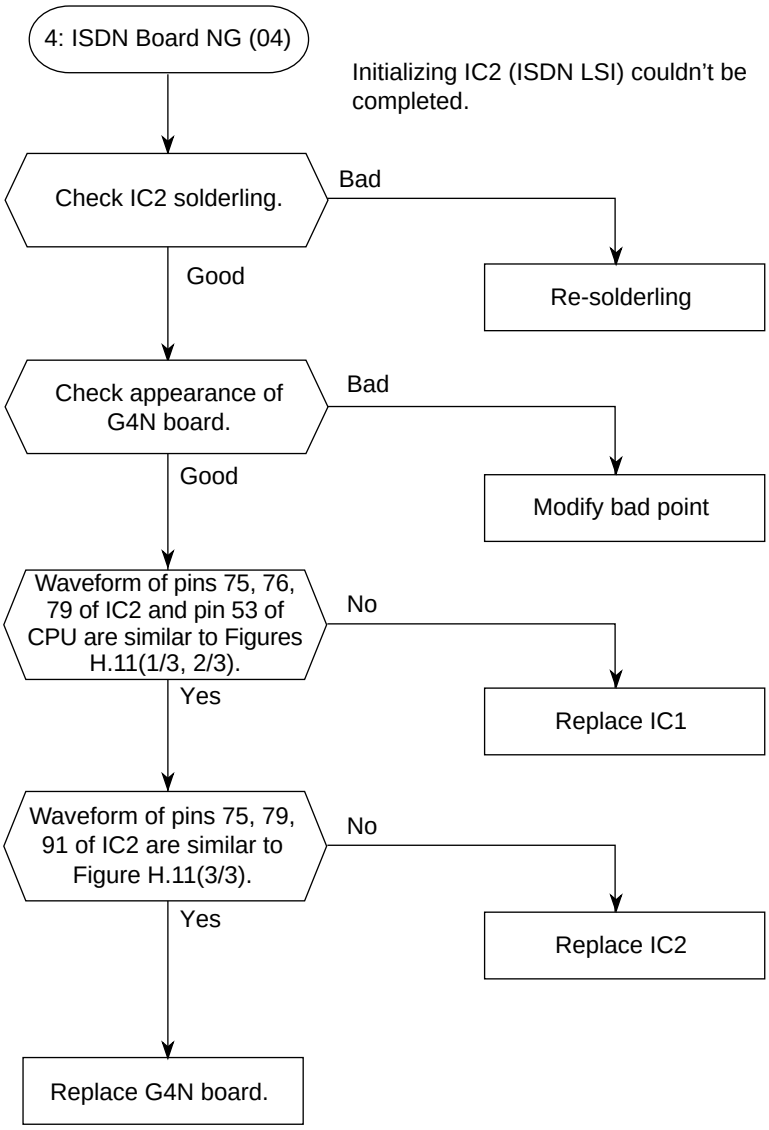
4.4.2 ISDN Board NG (02)



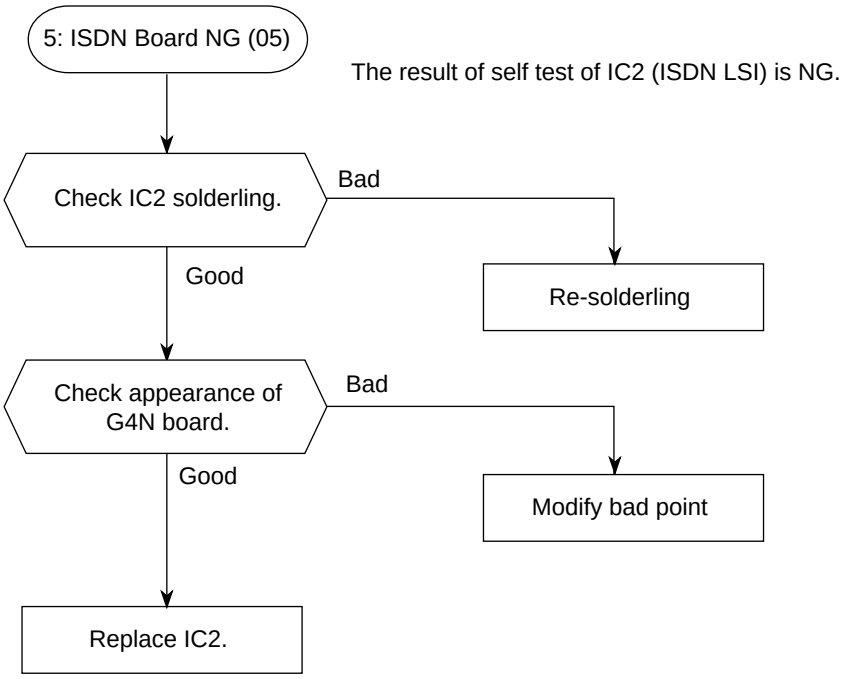
4.4.3 ISDN Board NG (03)



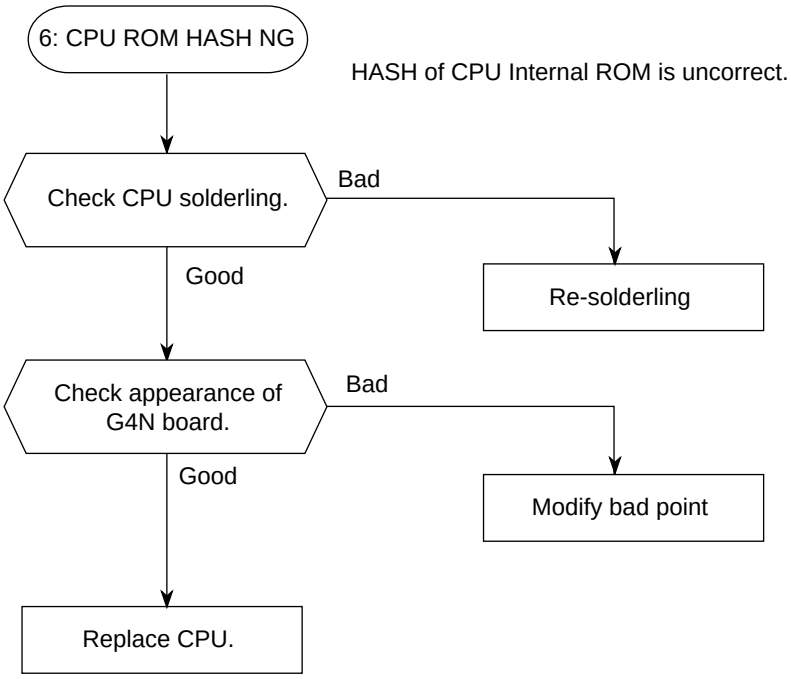
4.4.4 ISDN Board NG (04)



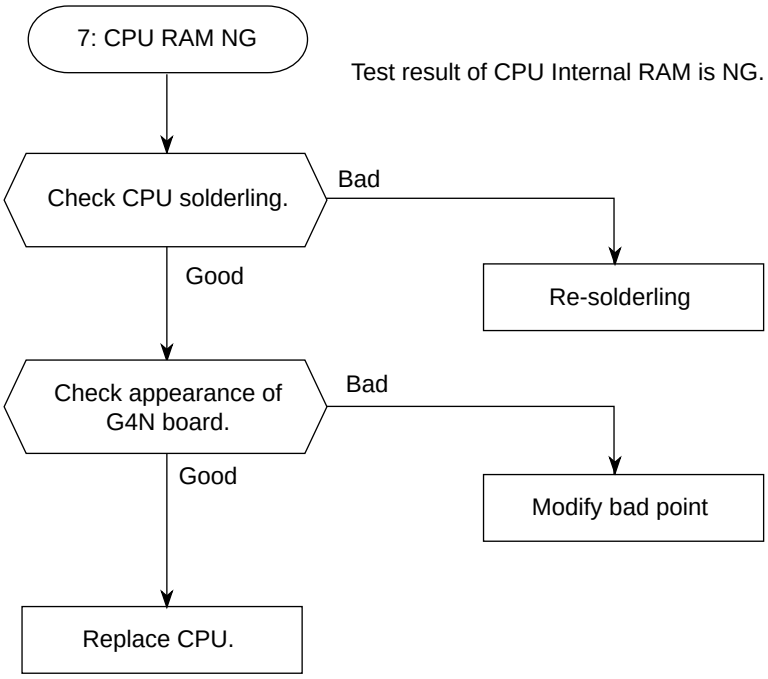
4.4.5 ISDN Board NG (05)



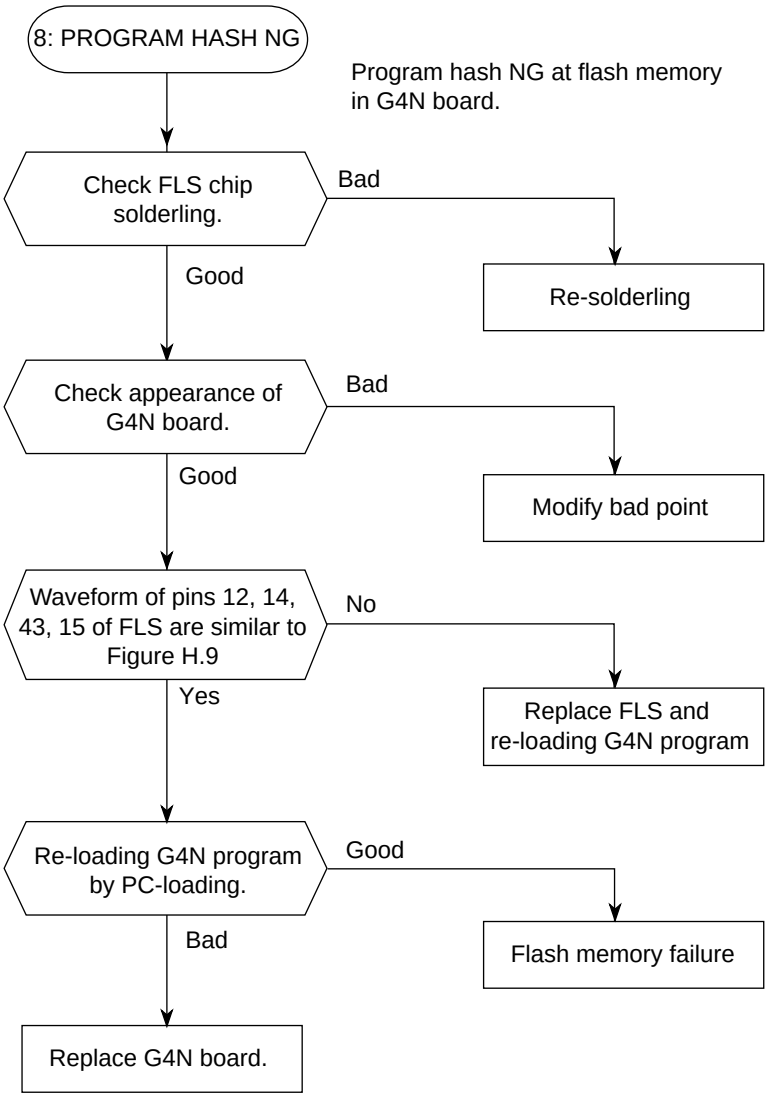
4.4.6 CPU ROM HASH NG



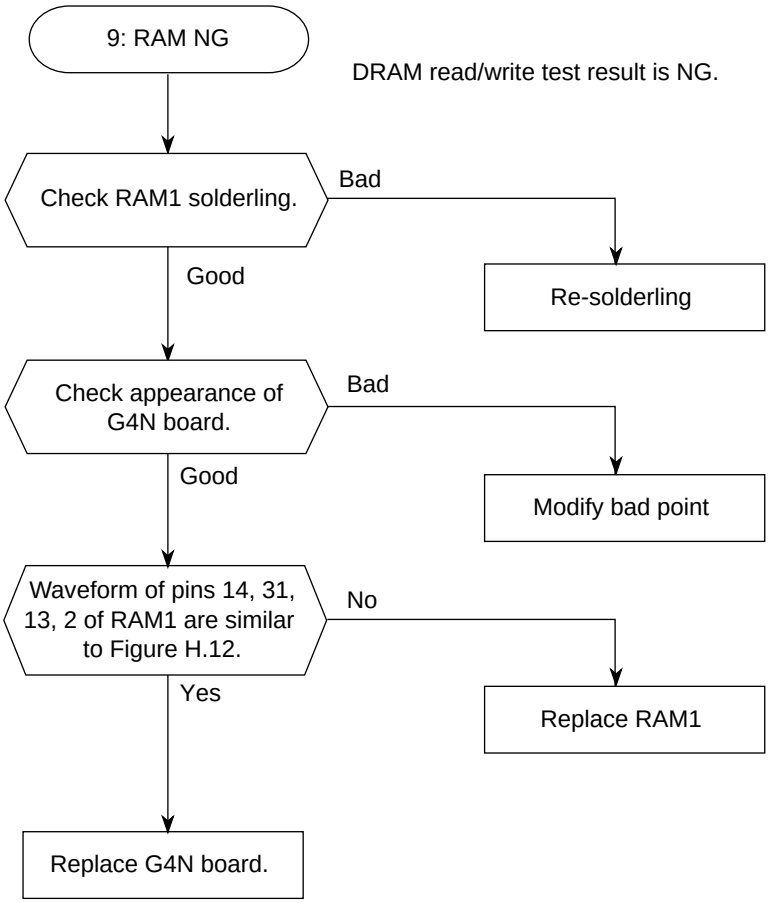
4.4.7 CPU RAM NG



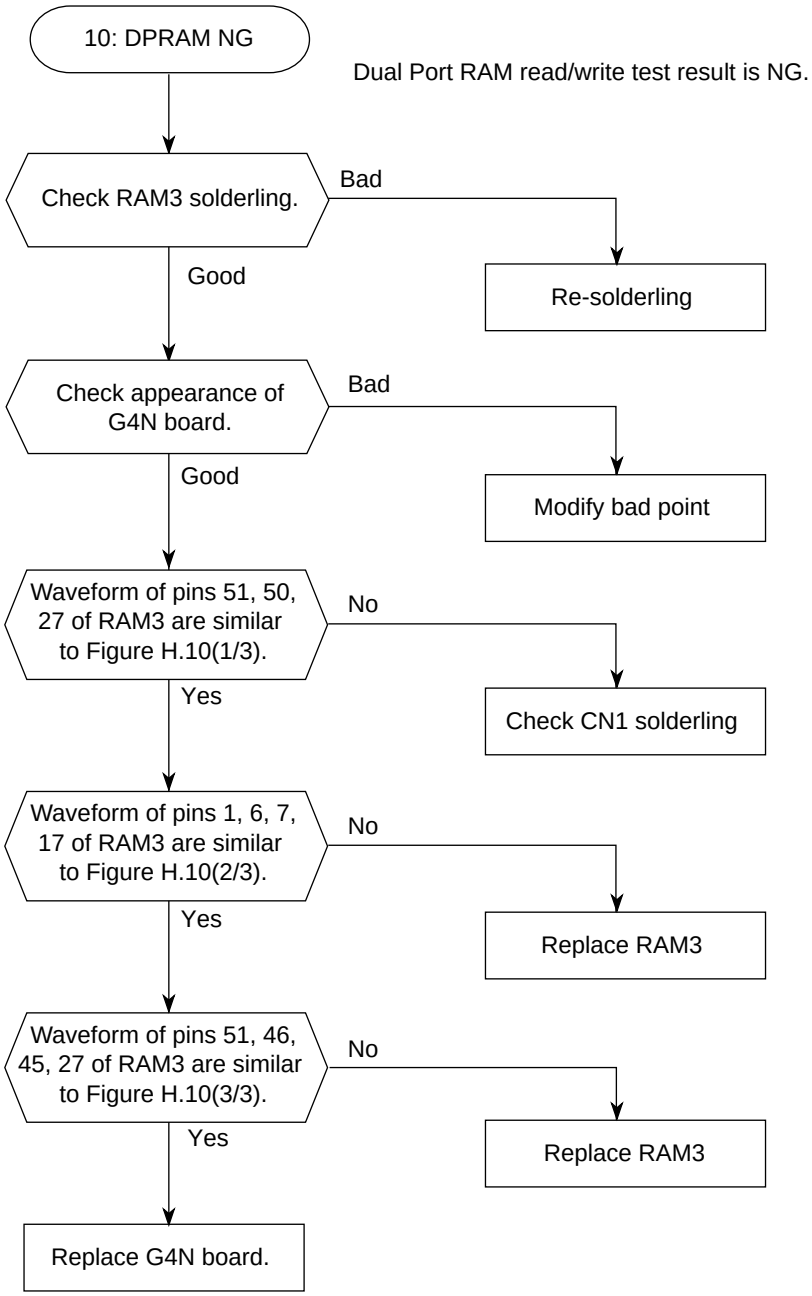
4.4.8 PROGRAM HASH NG



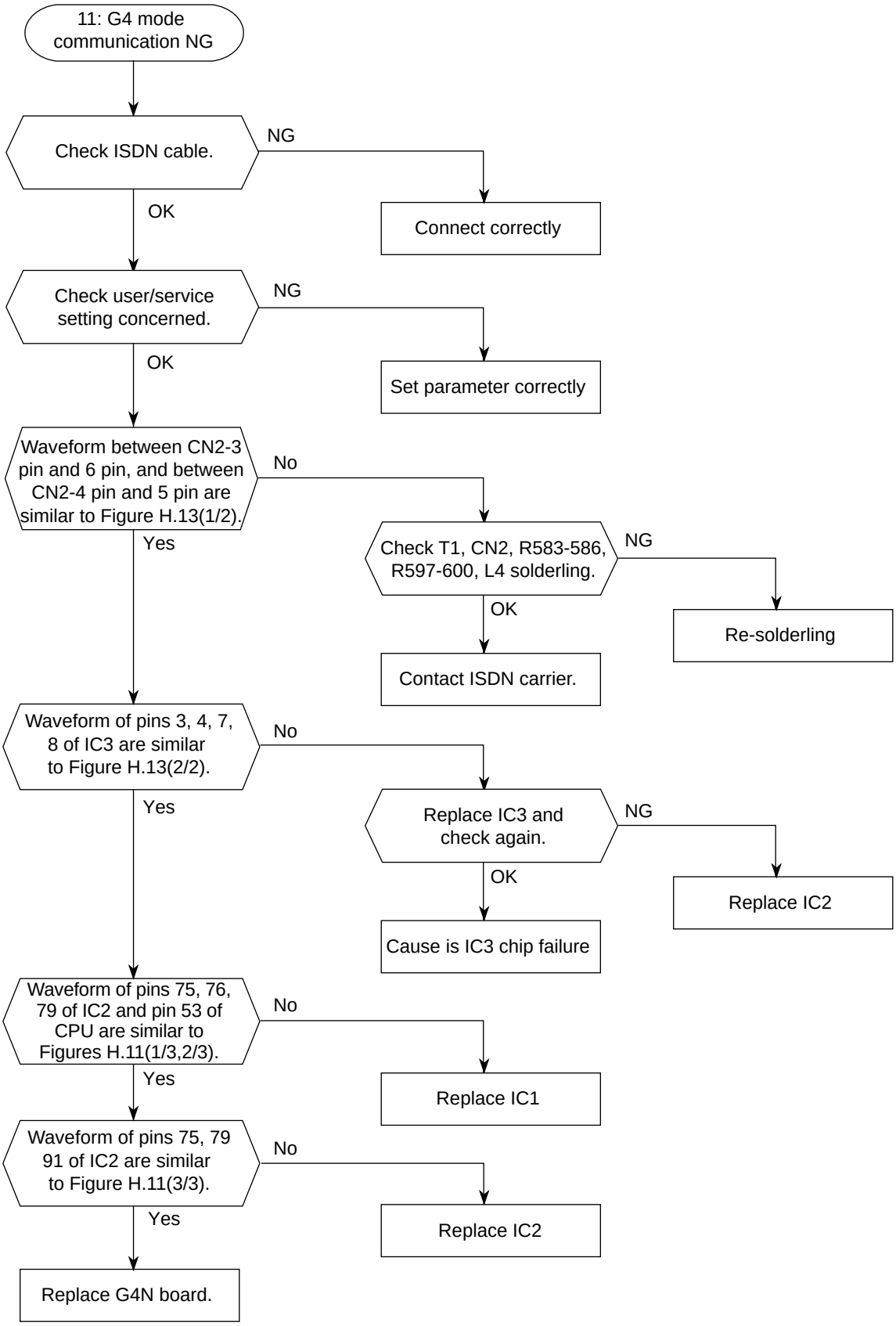
4.4.9 RAM NG


9: RAM NG
DRAM read/write test result is NG.
Check RAM1 solderling.
Bad
Re-solderling
Good
Check appearance of G4N board.
Bad
Modify bad point
Good
Waveform of pins 14, 31, 13, 2 of RAM1 are similar to Figure H.12.
No
Replace RAM1
Yes
Replace G4N board.

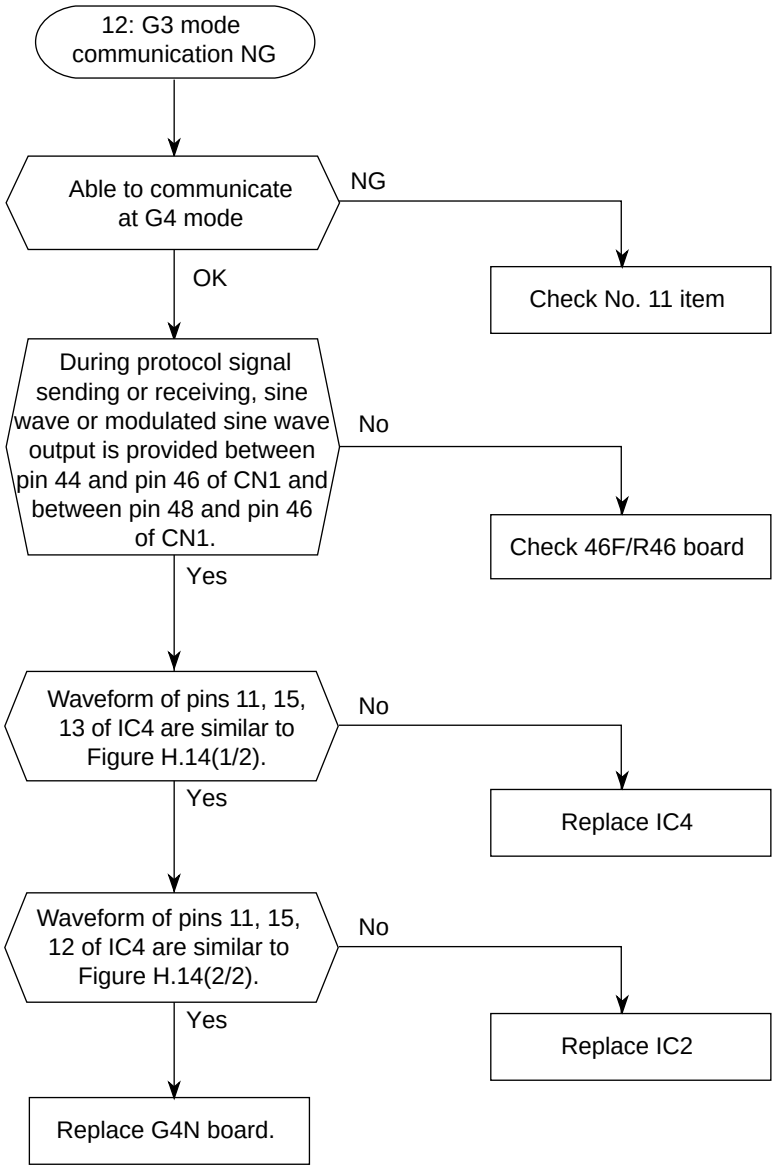
4.4.10 DPRAM NG



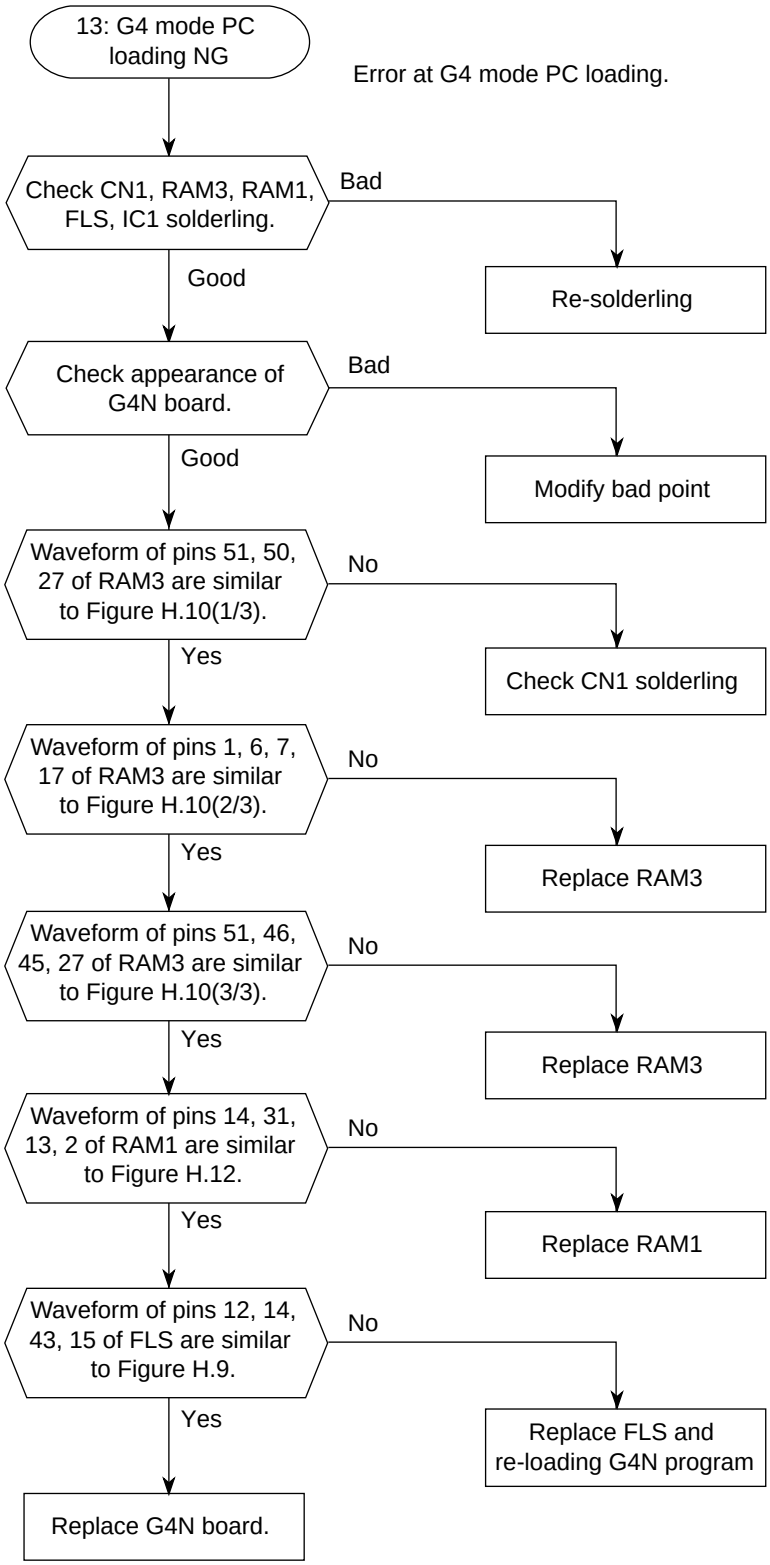
4.4.11 G4 mode communication NG



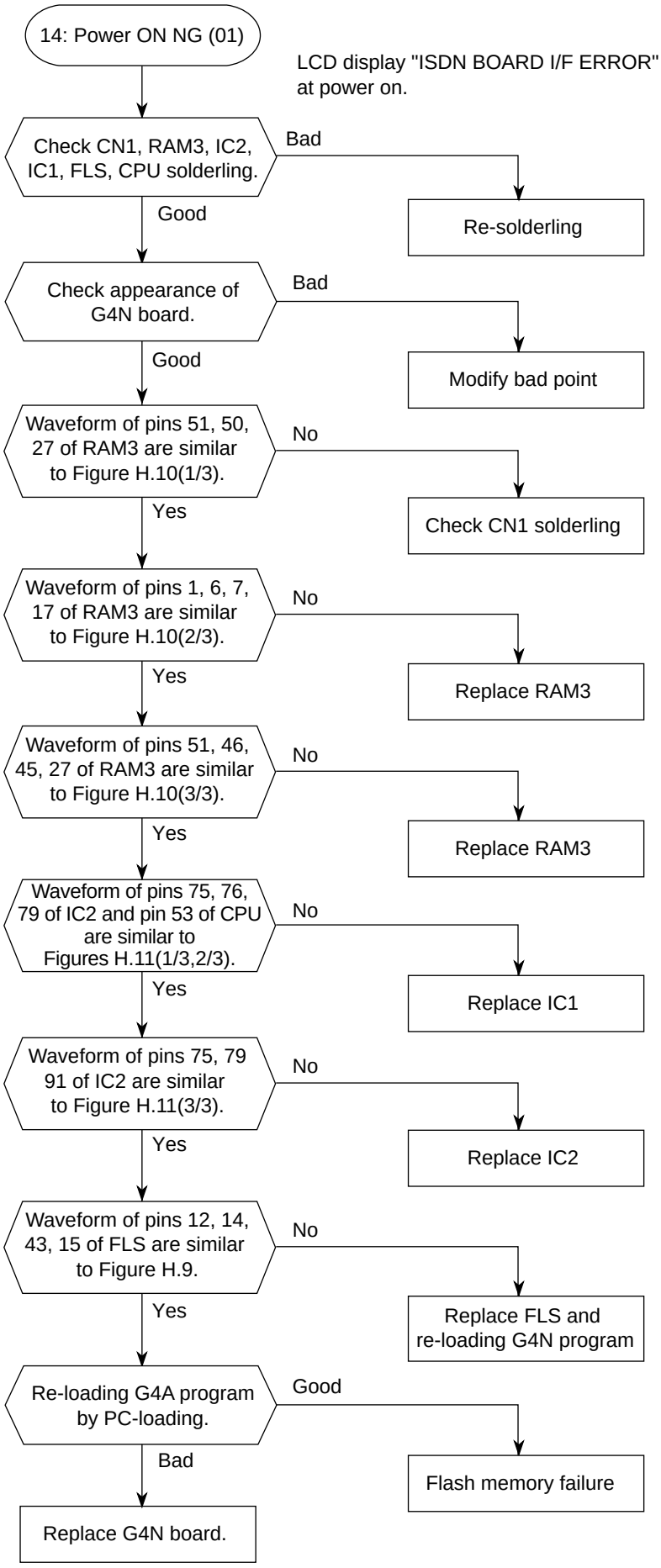
4.4.12 G3 mode communication NG


12: G3 mode communication NG
Able to communicate at G4 mode
NG
Check No. 11 item
OK
During protocol signal sending or receiving, sine wave or modulated sine wave output is provided between pin 44 and pin 46 of CN1 and between pin 48 and pin 46 of CN1.
No
Check 46F/R46 board
Yes
Waveform of pins 11, 15, 13 of IC4 are similar to Figure H.14(1/2).
No
Replace IC4
Yes
Waveform of pins 11, 15, 12 of IC4 are similar to Figure H.14(2/2).
No
Replace IC2
Yes
Replace G4N board.

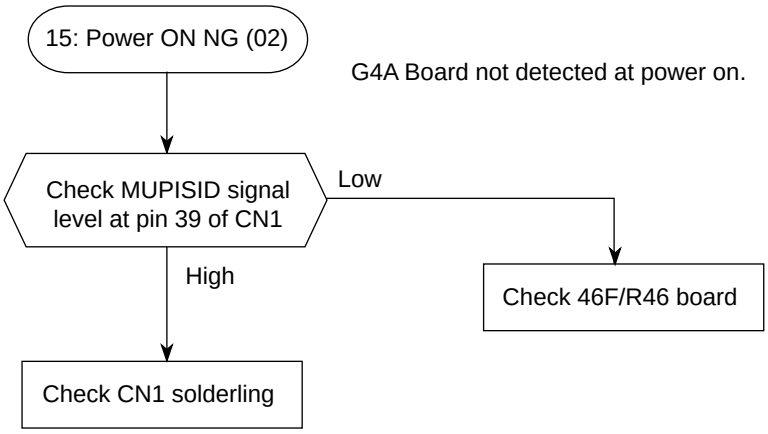
4.4.13 G4 mode PC loading NG


13: G4 mode PC loading NG
Error at G4 mode PC loading.
Check CN1, RAM3, RAM1, FLS, IC1 solderling.
Bad
Re-solderling
Good
Check appearance of G4N board.
Bad
Modify bad point
Good
Waveform of pins 51, 50, 27 of RAM3 are similar to Figure H.10(1/3).
No
Check CN1 solderling
Yes
Waveform of pins 1, 6, 7, 17 of RAM3 are similar to Figure H.10(2/3).
No
Replace RAM3
Yes
Waveform of pins 51, 46, 45, 27 of RAM3 are similar to Figure H.10(3/3).
No
Replace RAM3
Yes
Waveform of pins 14, 31, 13, 2 of RAM1 are similar to Figure H.12.
No
Replace RAM1
Yes
Waveform of pins 12, 14, 43, 15 of FLS are similar to Figure H.9.
No
Replace FLS and re-loading G4N program
Yes
Replace G4N board.

4.4.14 Power ON NG (01)


14: Power ON NG (01)
LCD display "ISDN BOARD I/F ERROR" at power on.
Check CN1, RAM3, IC2, IC1, FLS, CPU solderling.
Bad
Re-solderling
Good
Check appearance of G4N board.
Bad
Modify bad point
Good
Waveform of pins 51, 50, 27 of RAM3 are similar to Figure H.10(1/3).
No
Check CN1 solderling
Yes
Waveform of pins 1, 6, 7, 17 of RAM3 are similar to Figure H.10(2/3).
No
Replace RAM3
Yes
Waveform of pins 51, 46, 45, 27 of RAM3 are similar to Figure H.10(3/3).
No
Replace RAM3
Yes
Waveform of pins 75, 76, 79 of IC2 and pin 53 of CPU are similar to Figures H.11(1/3,2/3).
No
Replace IC1
Yes
Waveform of pins 75, 79 91 of IC2 are similar to Figure H.11(3/3).
No
Replace IC2
Yes
Waveform of pins 12, 14, 43, 15 of FLS are similar to Figure H.9.
No
Replace FLS and re-loading G4N program
Yes
Re-loading G4A program by PC-loading.
Good
Flash memory failure
Bad
Replace G4N board.

4.4.15 Power ON NG (02)


15: Power ON NG (02)
G4A Board not detected at power on.
Check MUPISID signal level at pin 39 of CN1
Low
High
Check 46F/R46 board
Check CN1 solderling

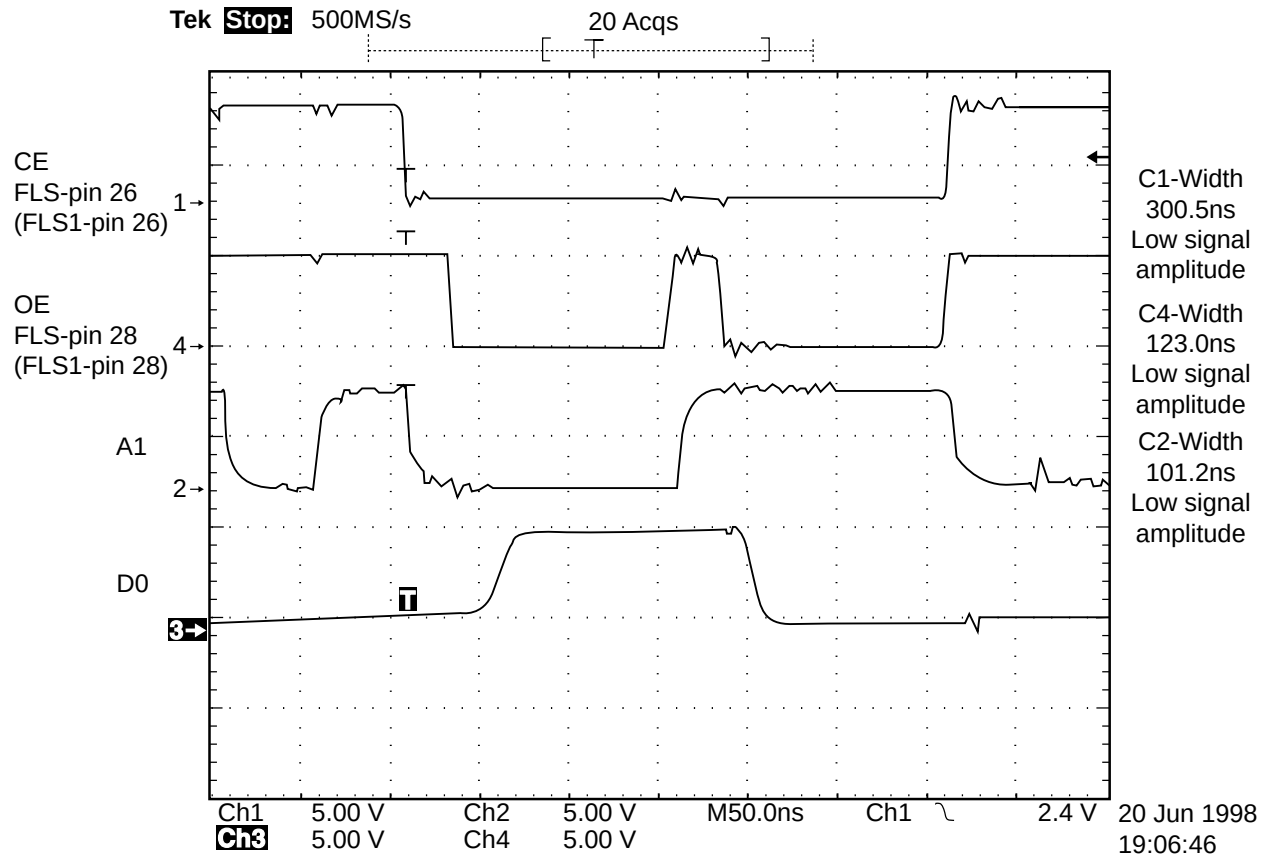


Figure H.1 (1/4) FLASH RD

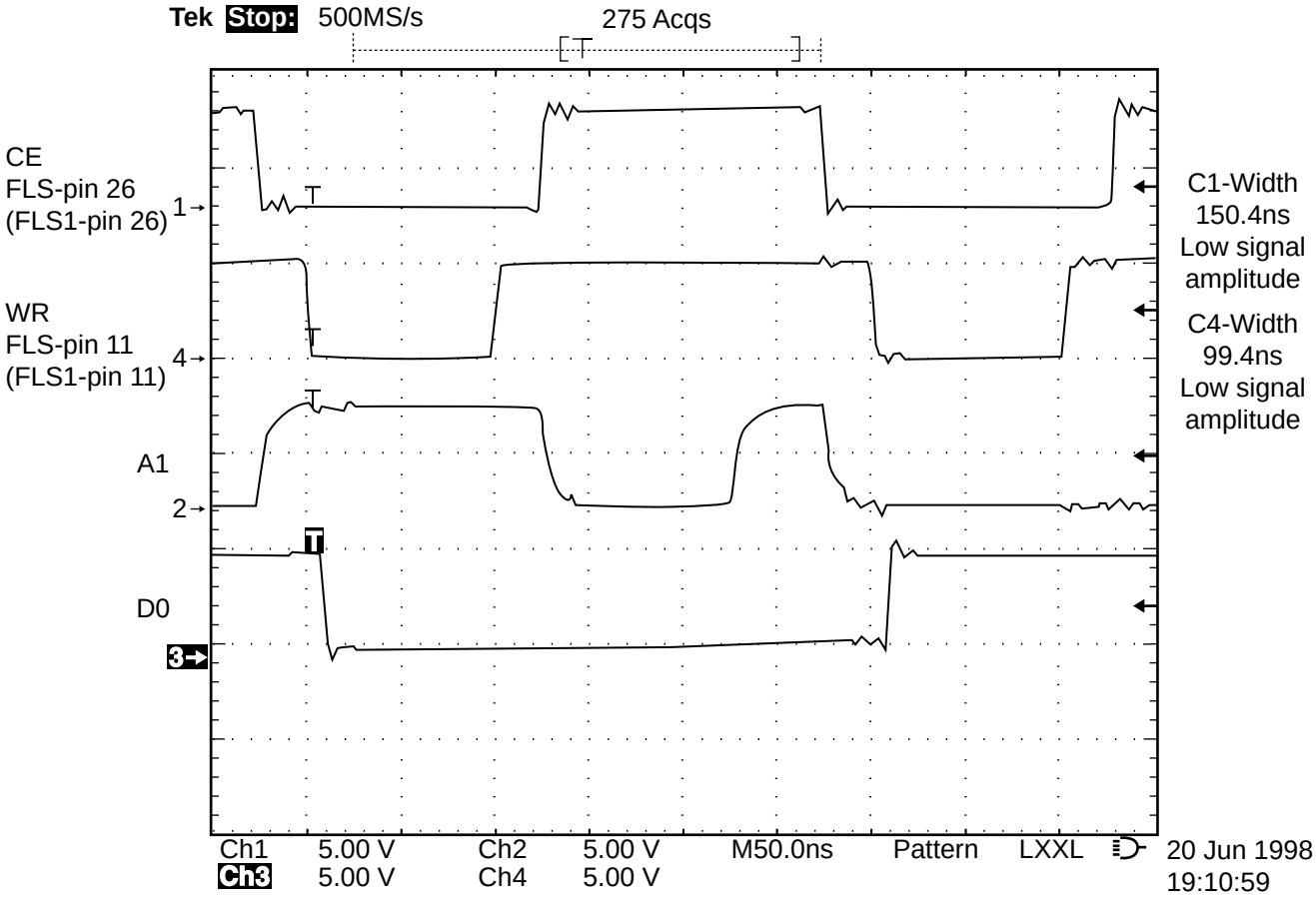


Figure H.1 (2/4) FLASH WR

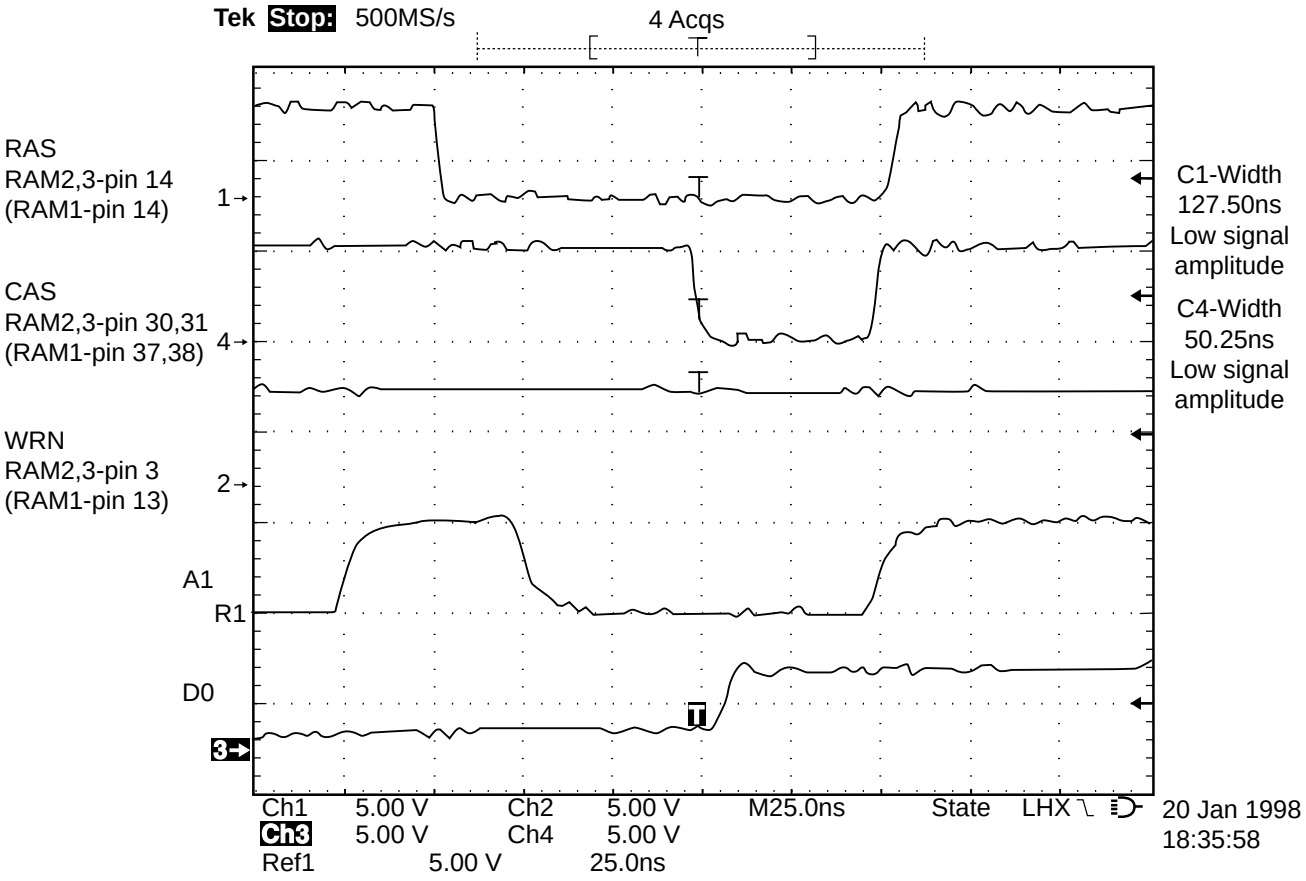


Figure H.1 (3/4) DRAM RD

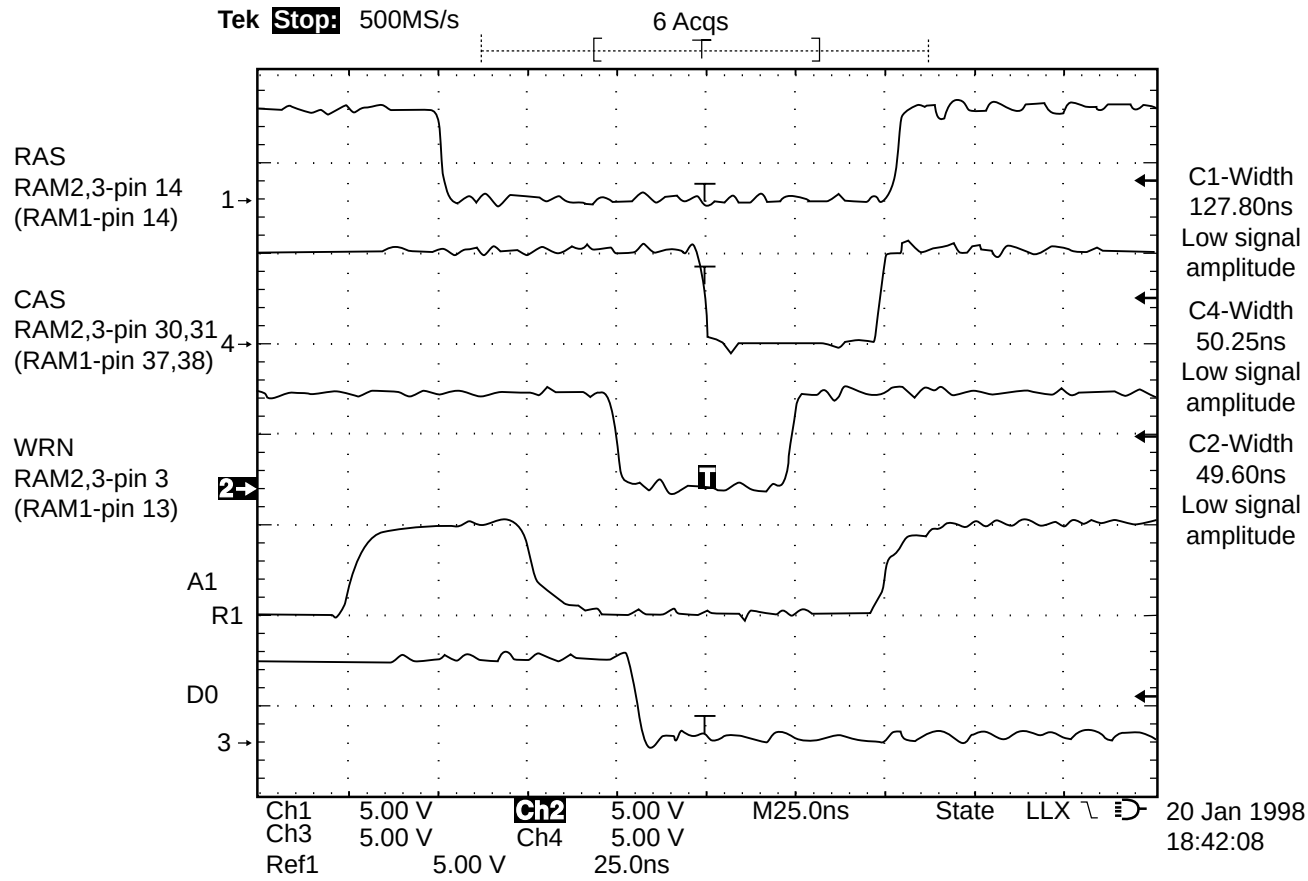


Figure H.1 (4/4) DRAM WR

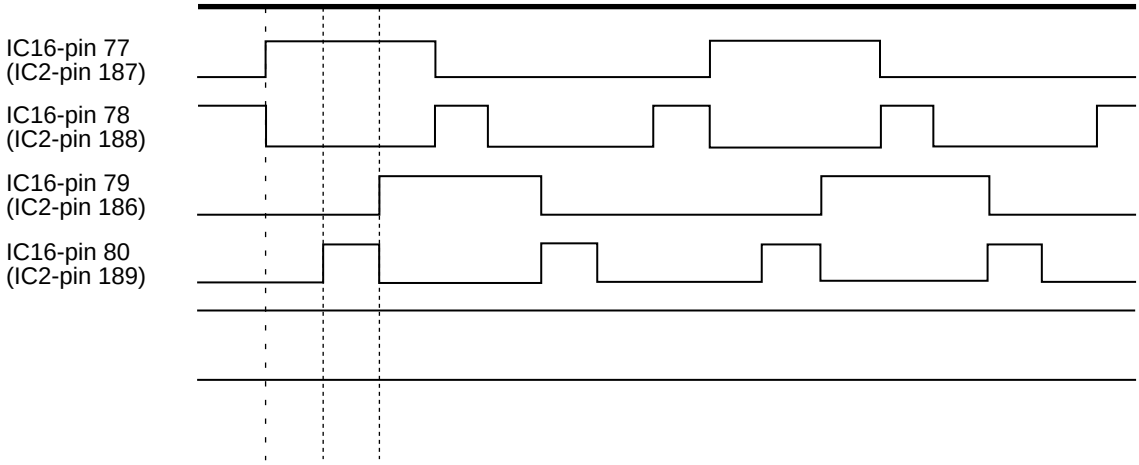

IC16-pin 77
(IC2-pin 187)
IC16-pin 78
(IC2-pin 188)
IC16-pin 79
(IC2-pin 186)
IC16-pin 80
(IC2-pin 189)

Figure H.2

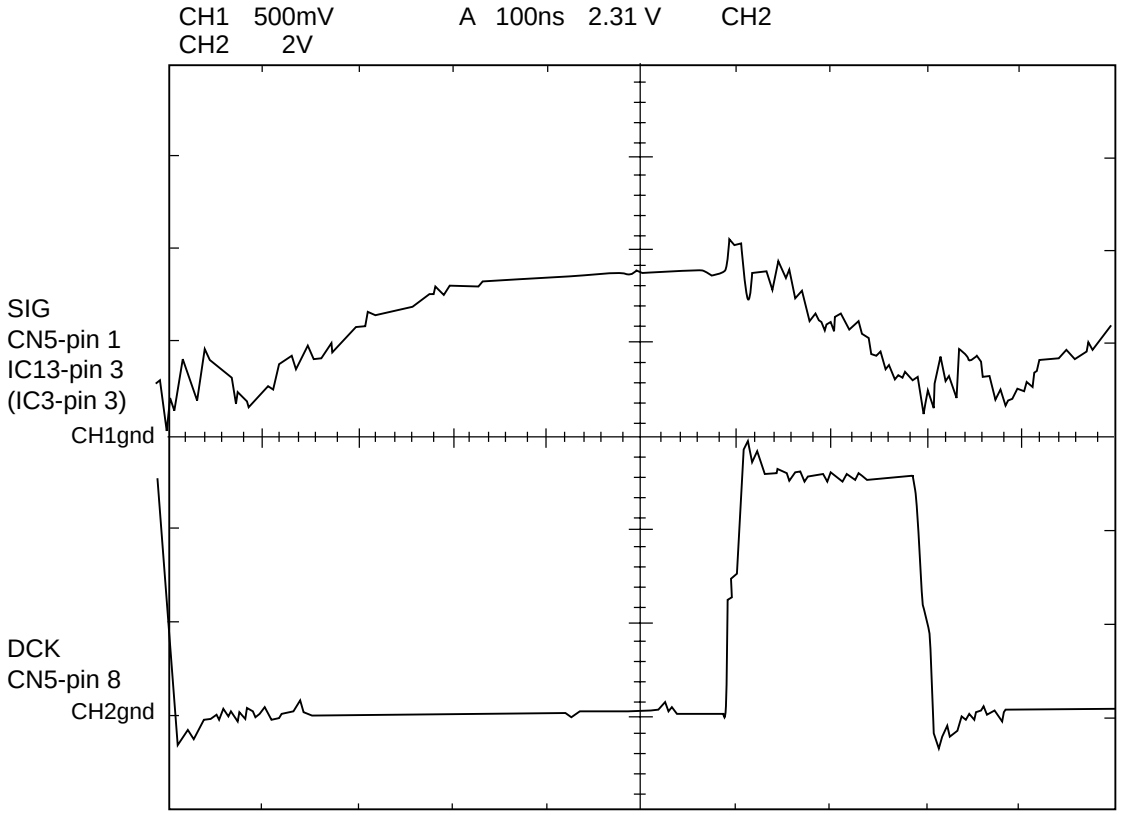


Figure H.3 (1/2)

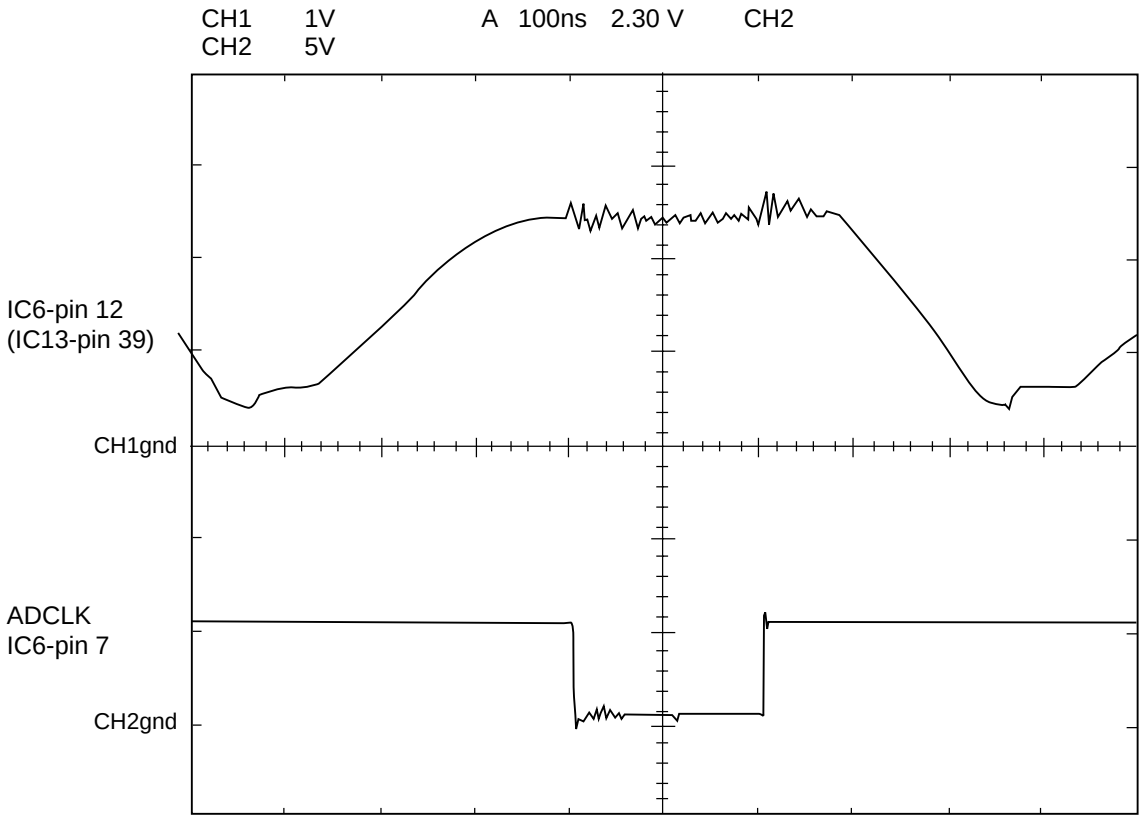


Figure H.3 (2/2)

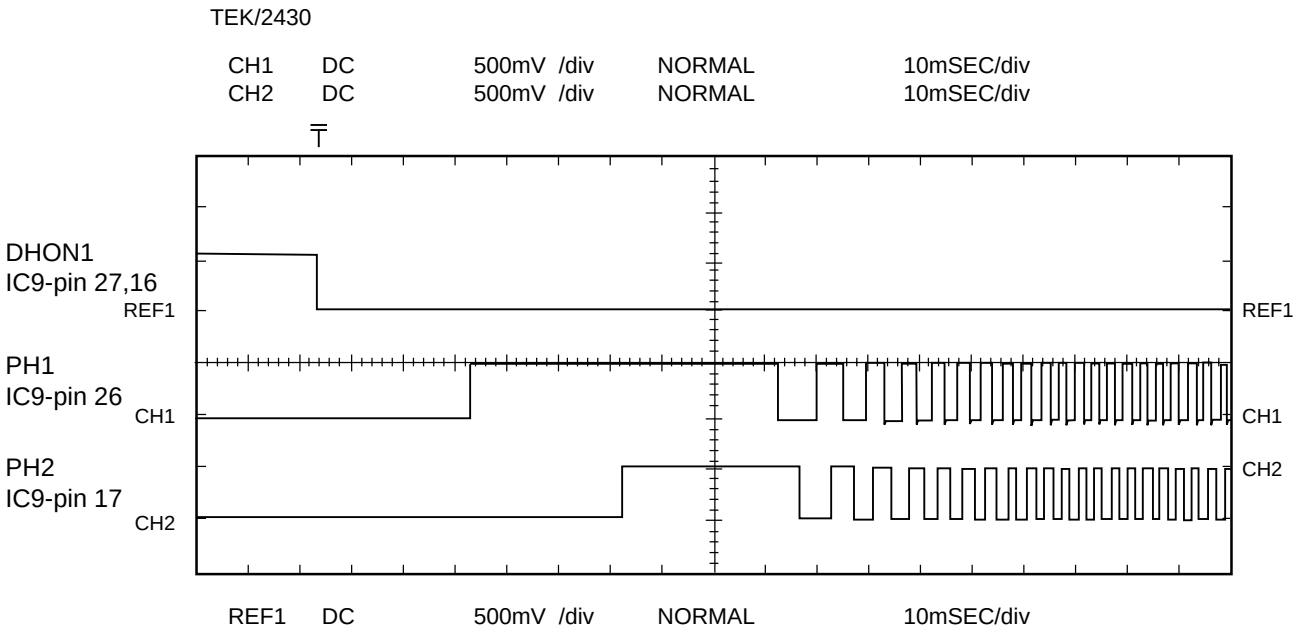


Figure H.4 (1/2)

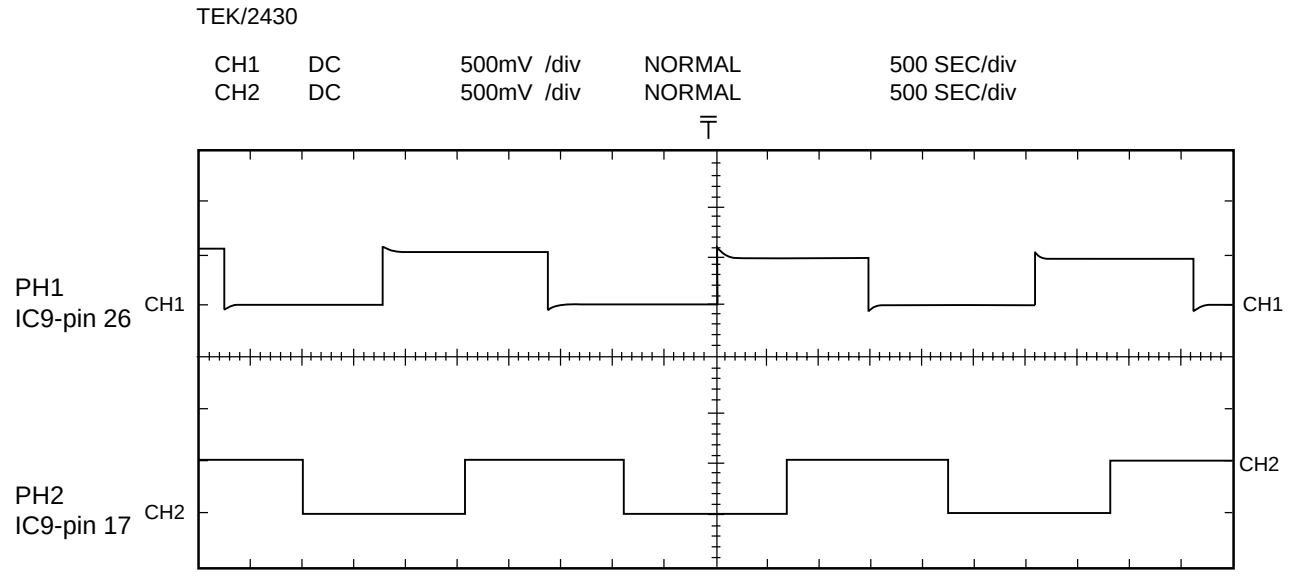


Figure H.4 (2/2)

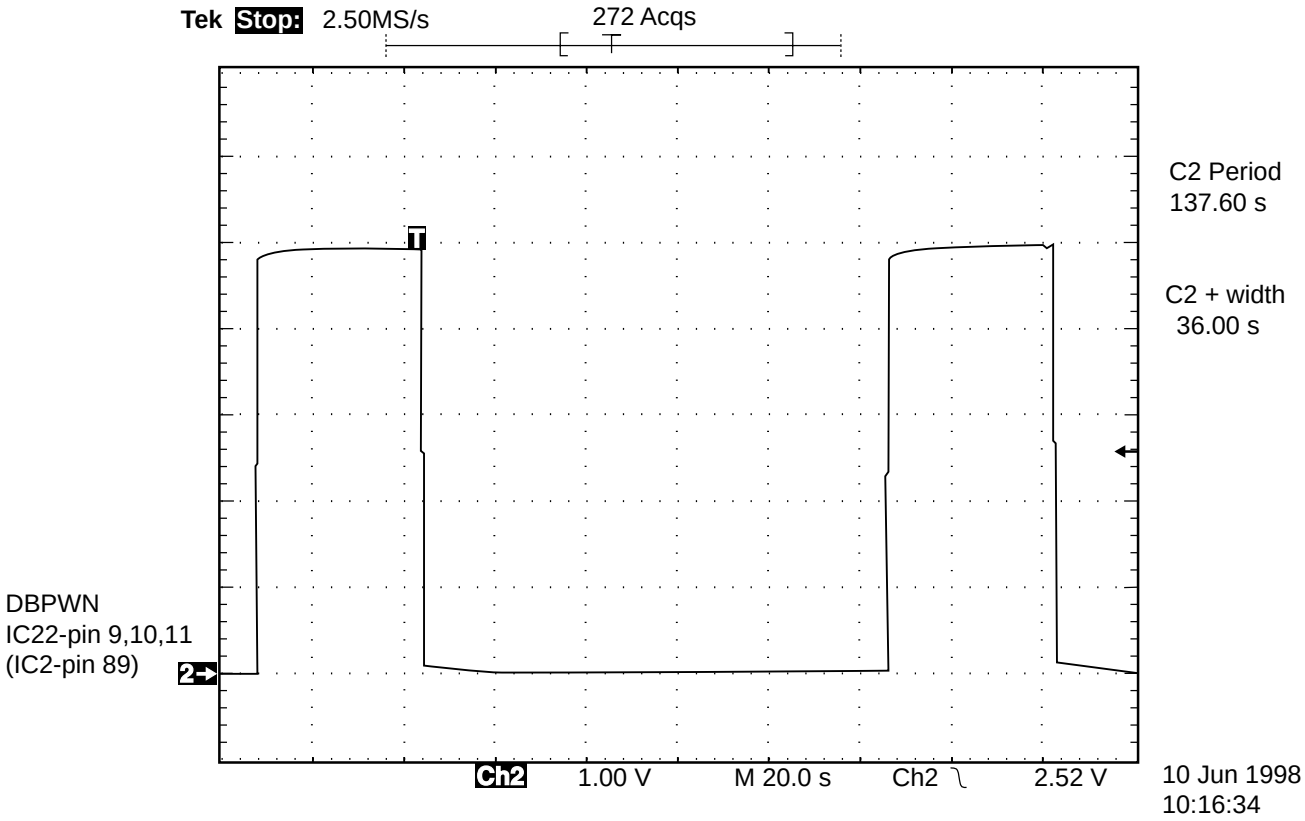


Figure H.5 (1/6)

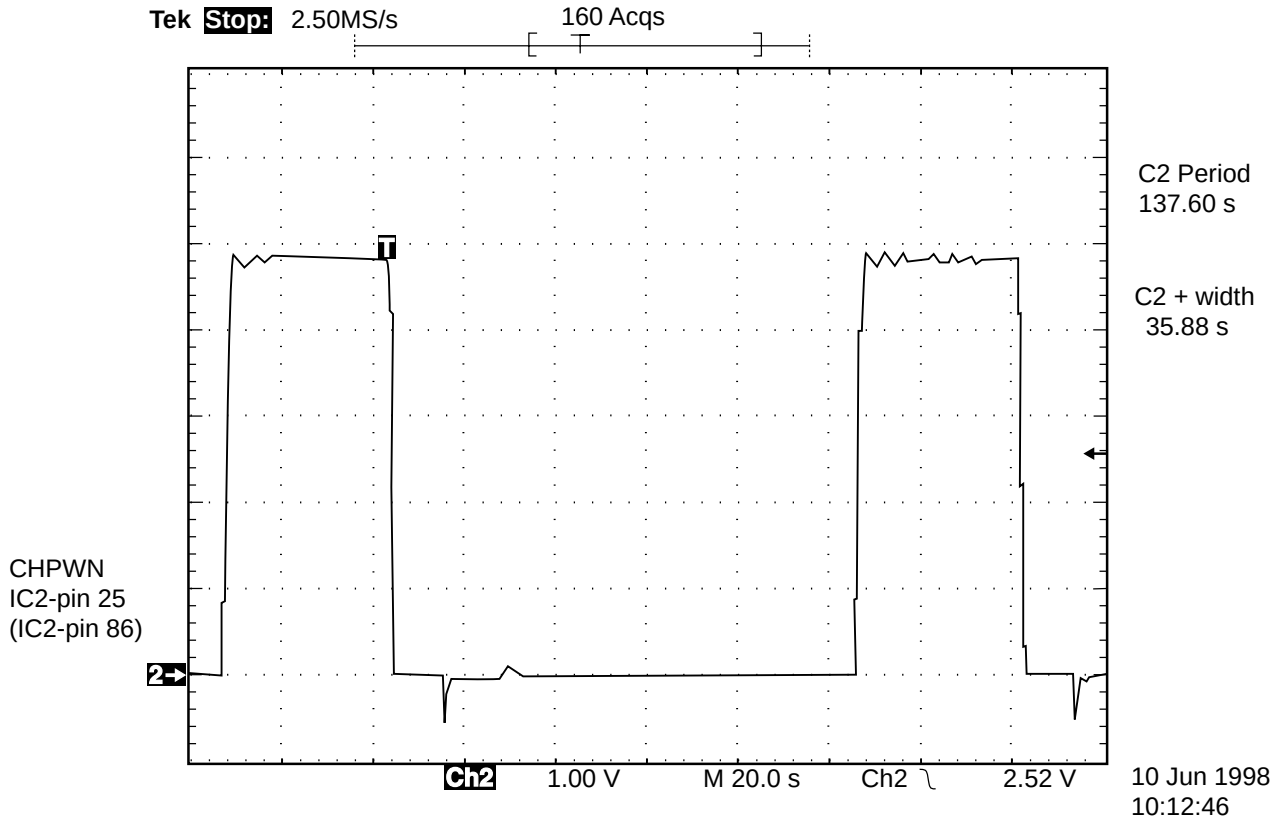


Figure H.5 (2/6)

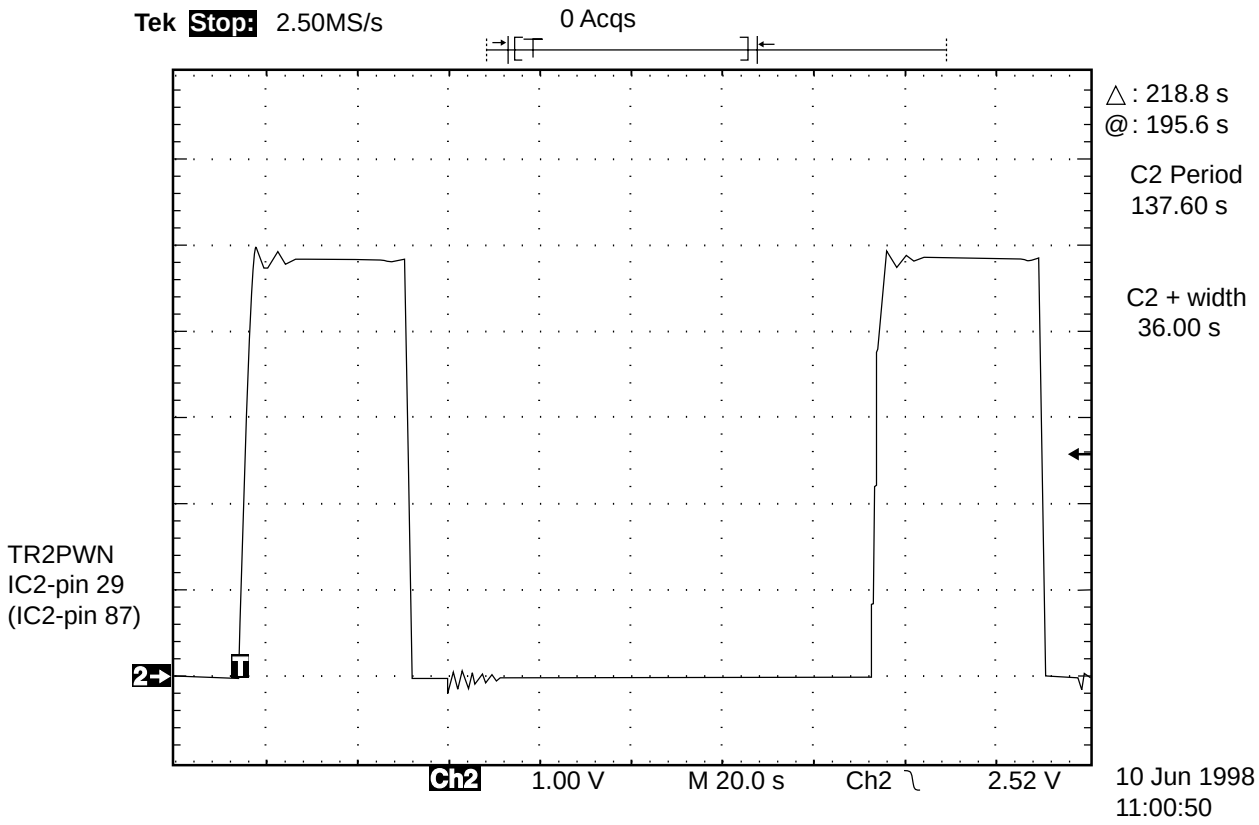


Figure H.5 (3/6)

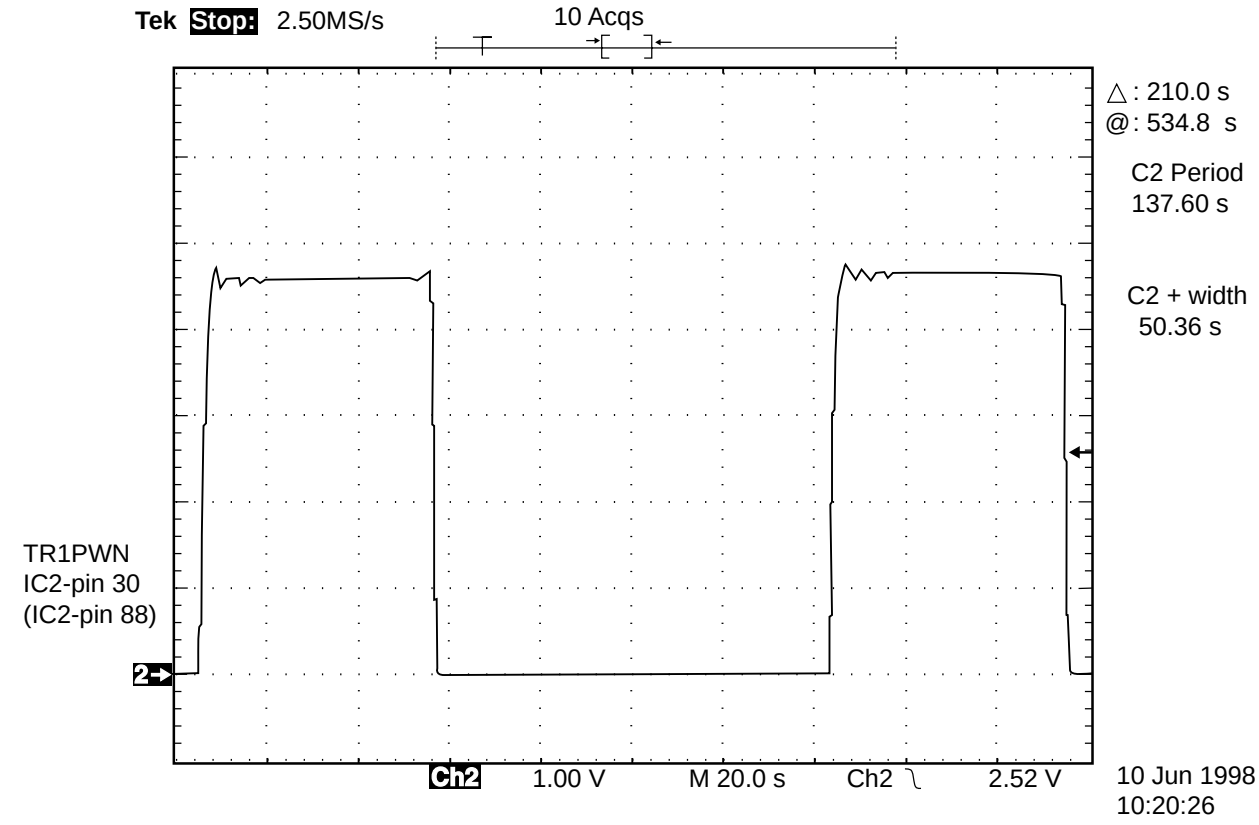


Figure H.5 (4/6)

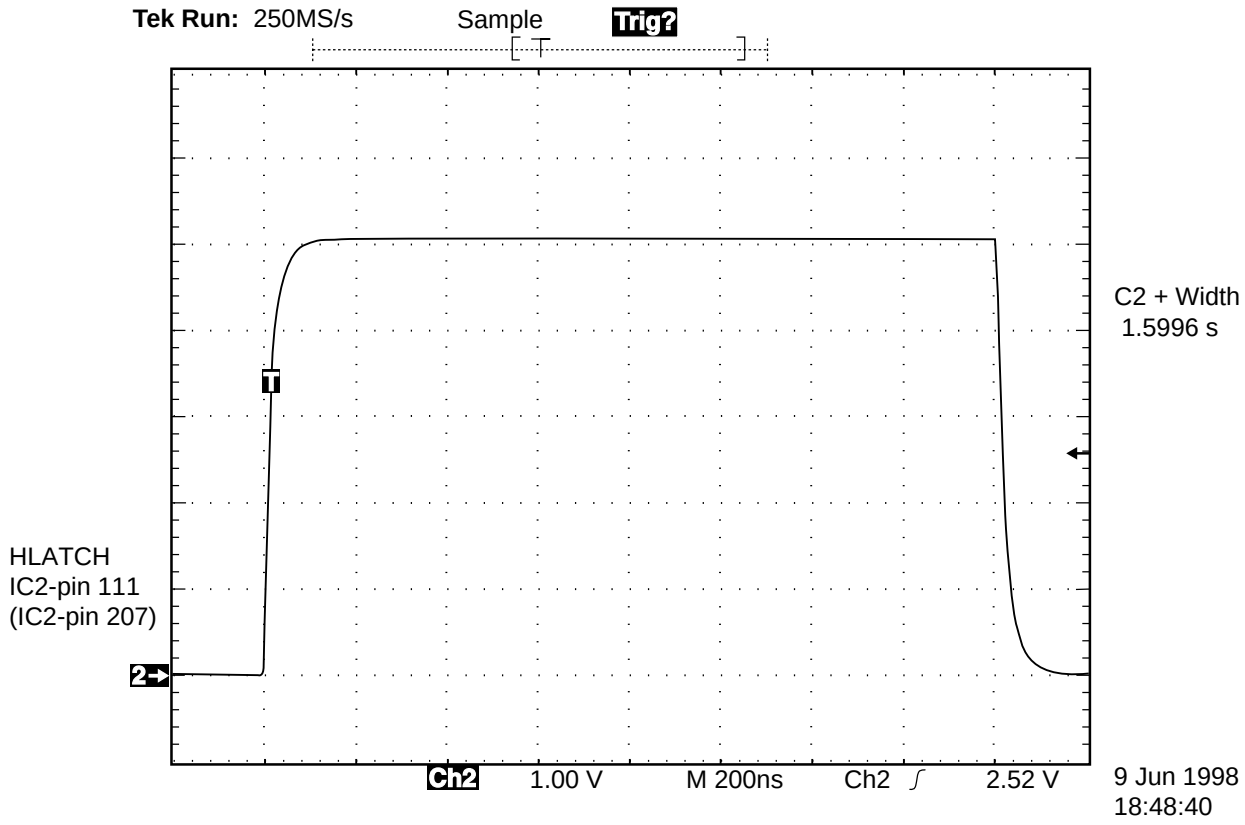


Figure H.5 (5/6)

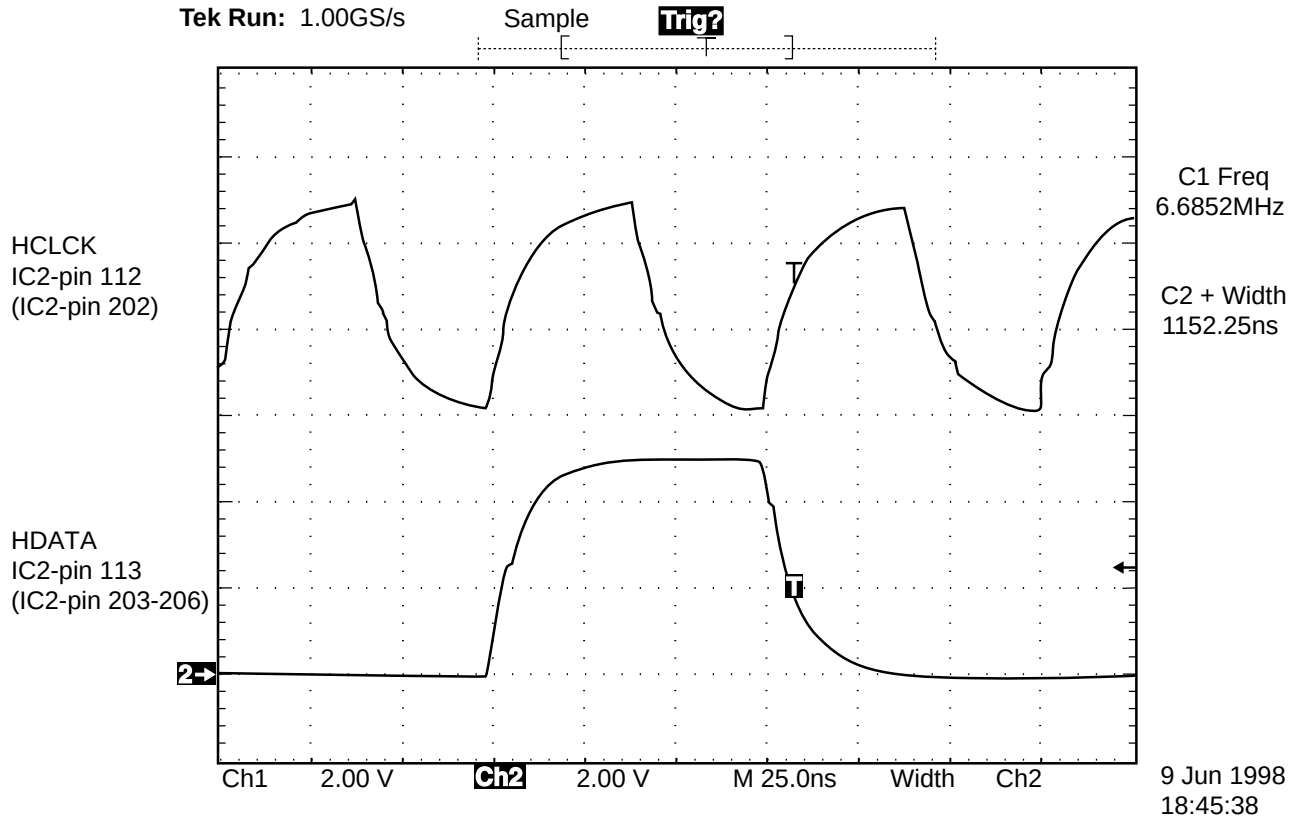


Figure H.5 (6/6)

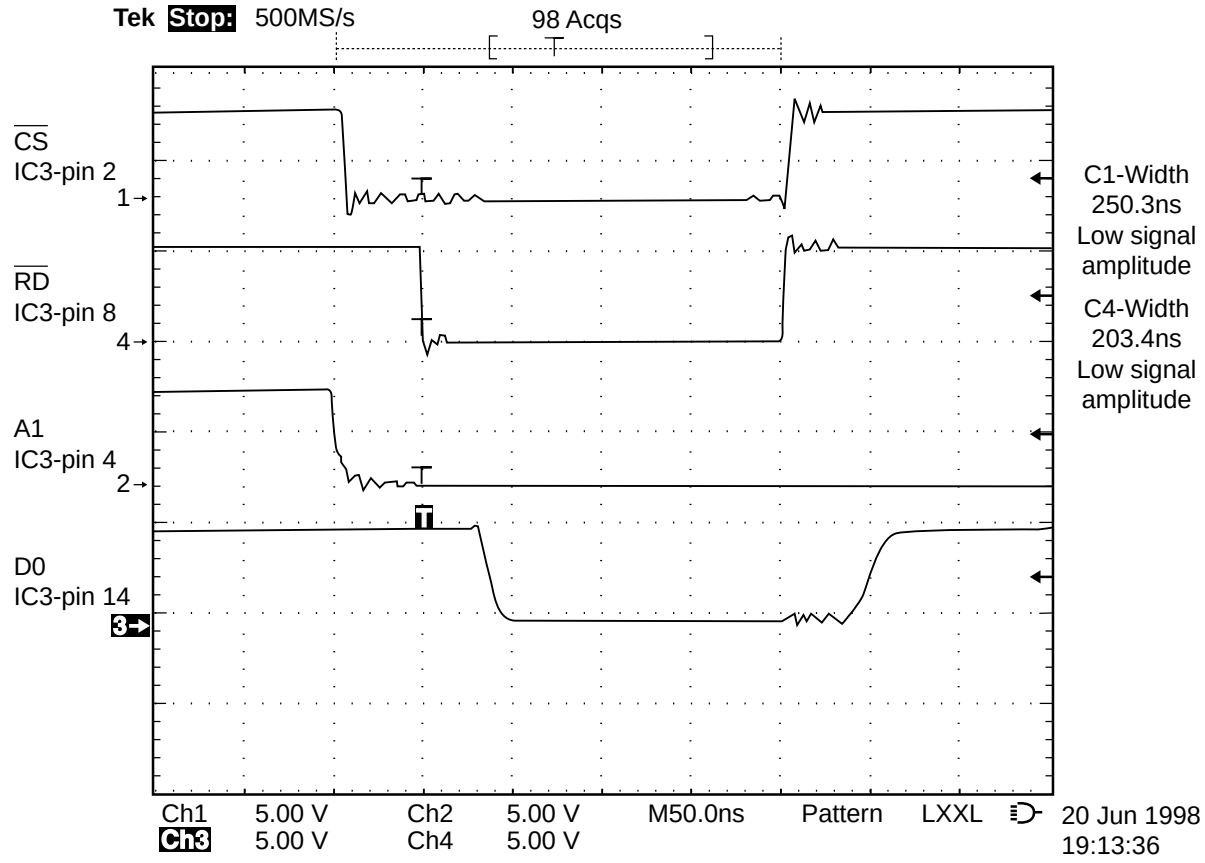


Figure H.6 (1/2)

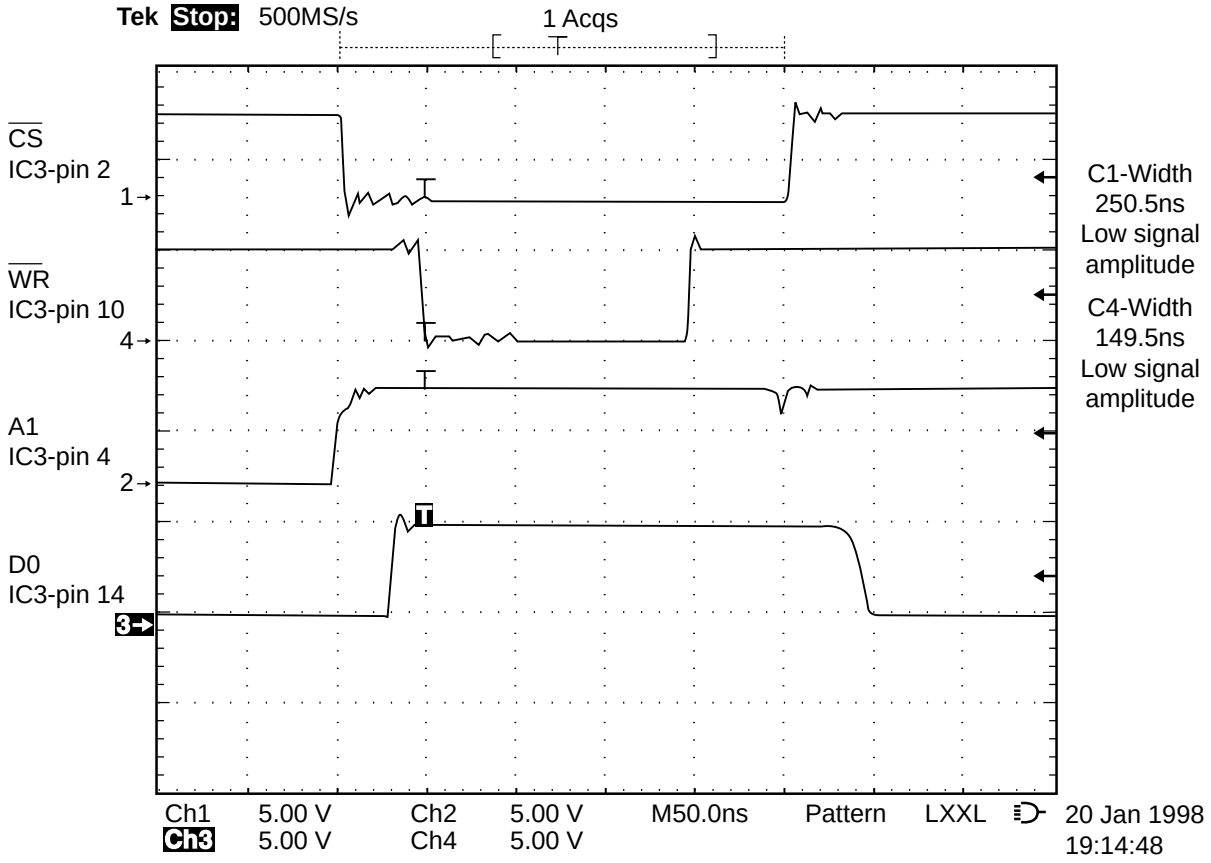


Figure H.6 (2/2)

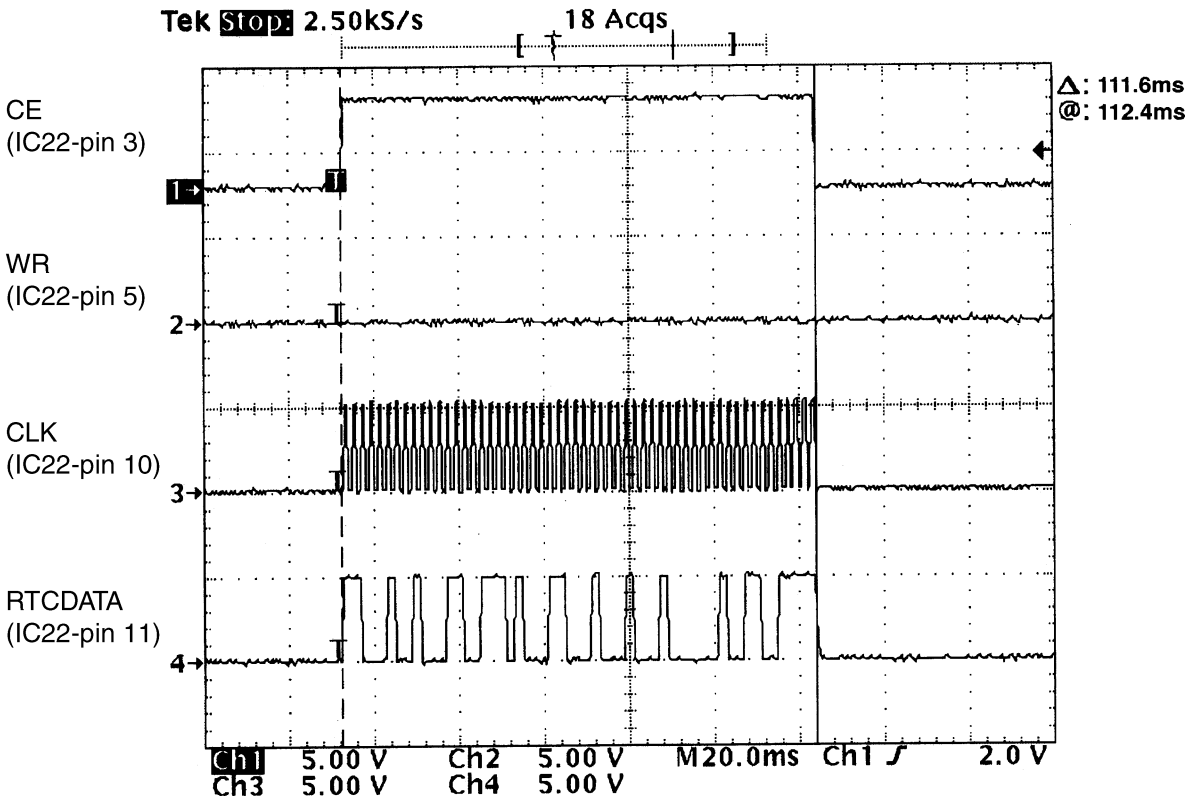


Figure H.7 (1/2) RTC Time Read

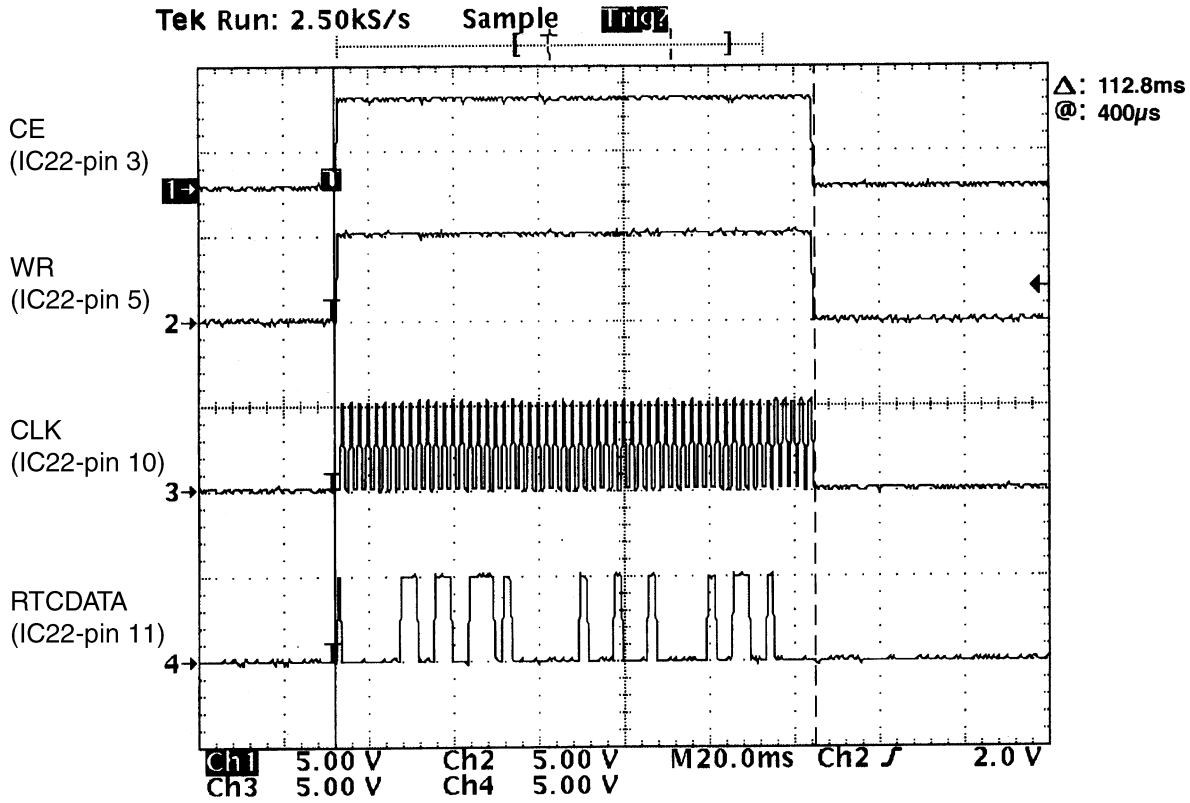


Figure H.7 (2/2) RTC Time Set

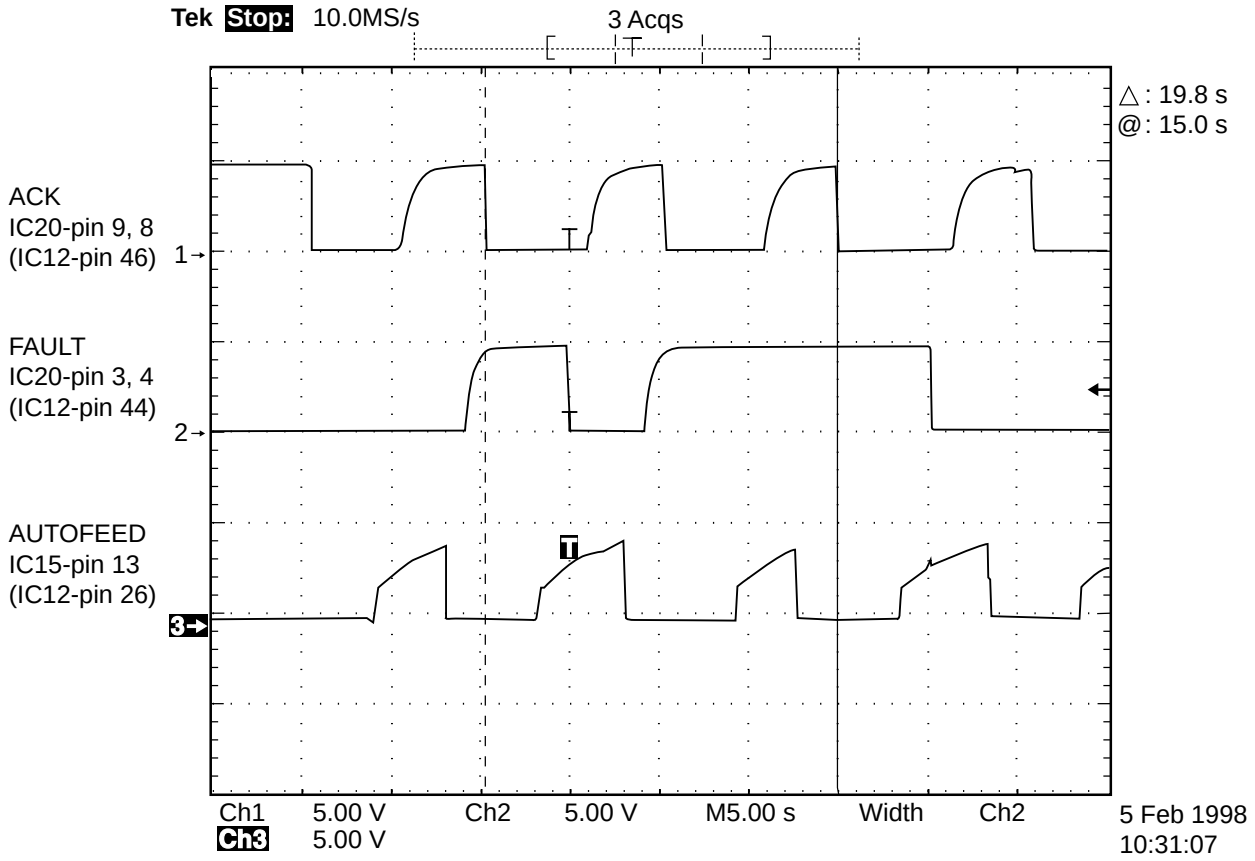


Figure H.8 (1/2)

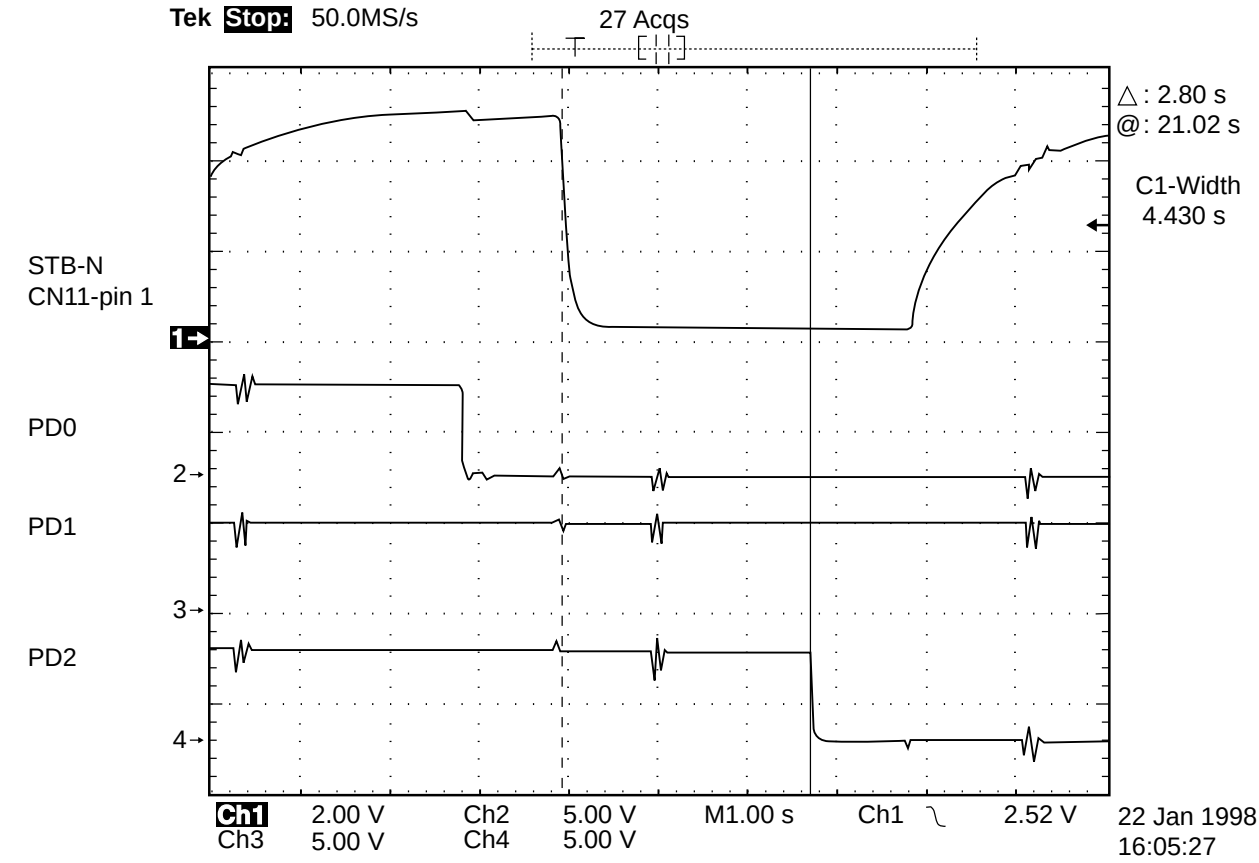


Figure H.8 (2/2)

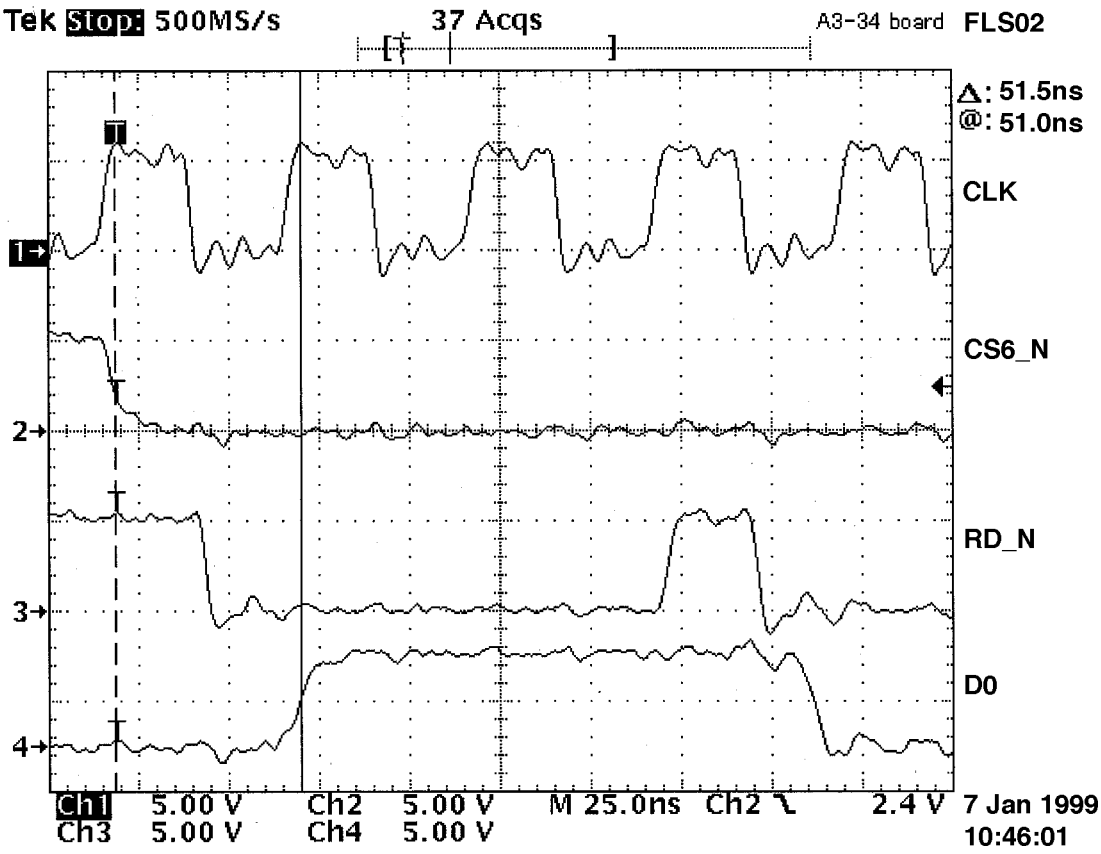


Figure H.9

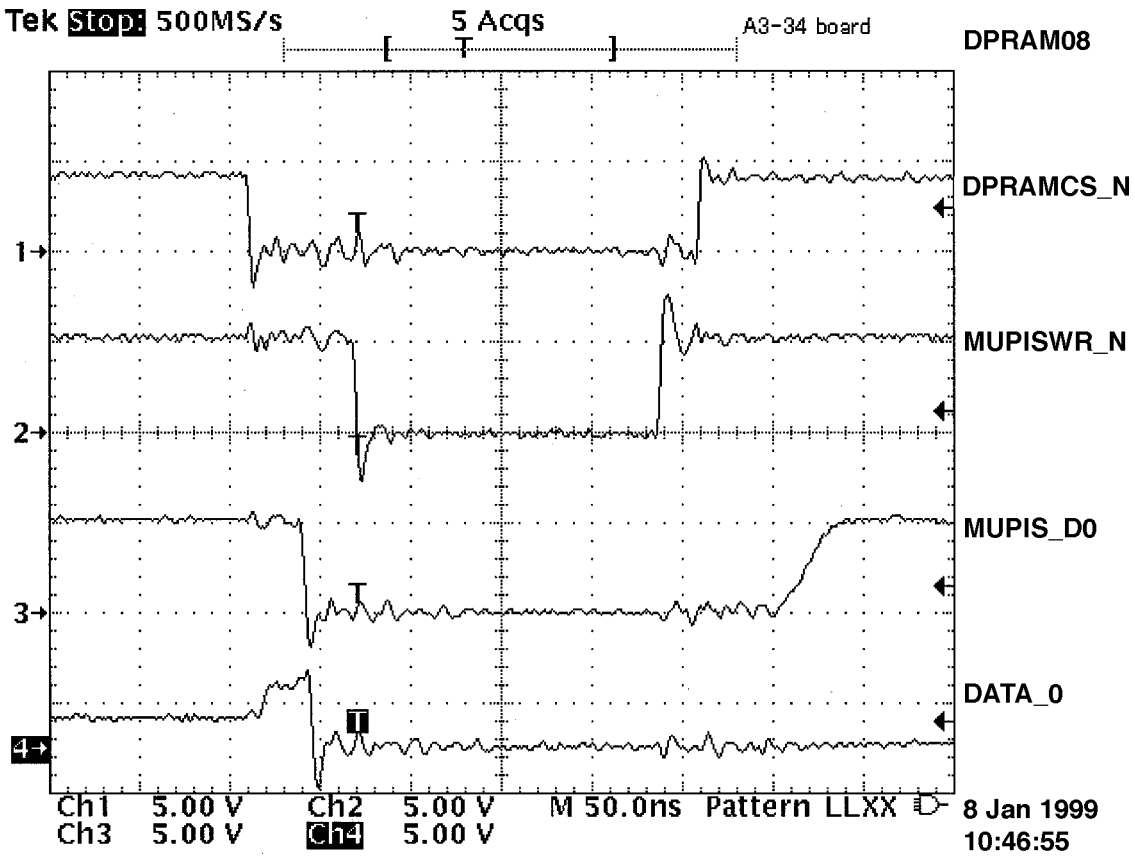


Figure H.10 (1/3)

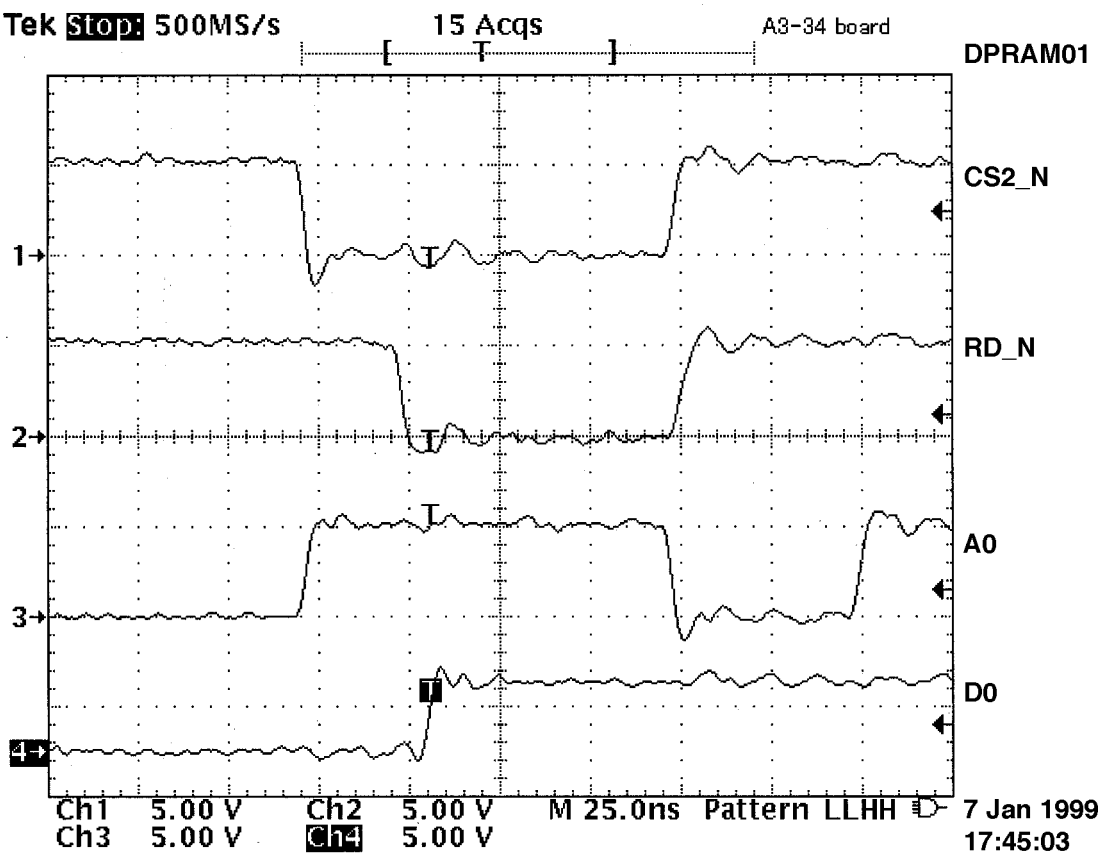


Figure H.10 (2/3)

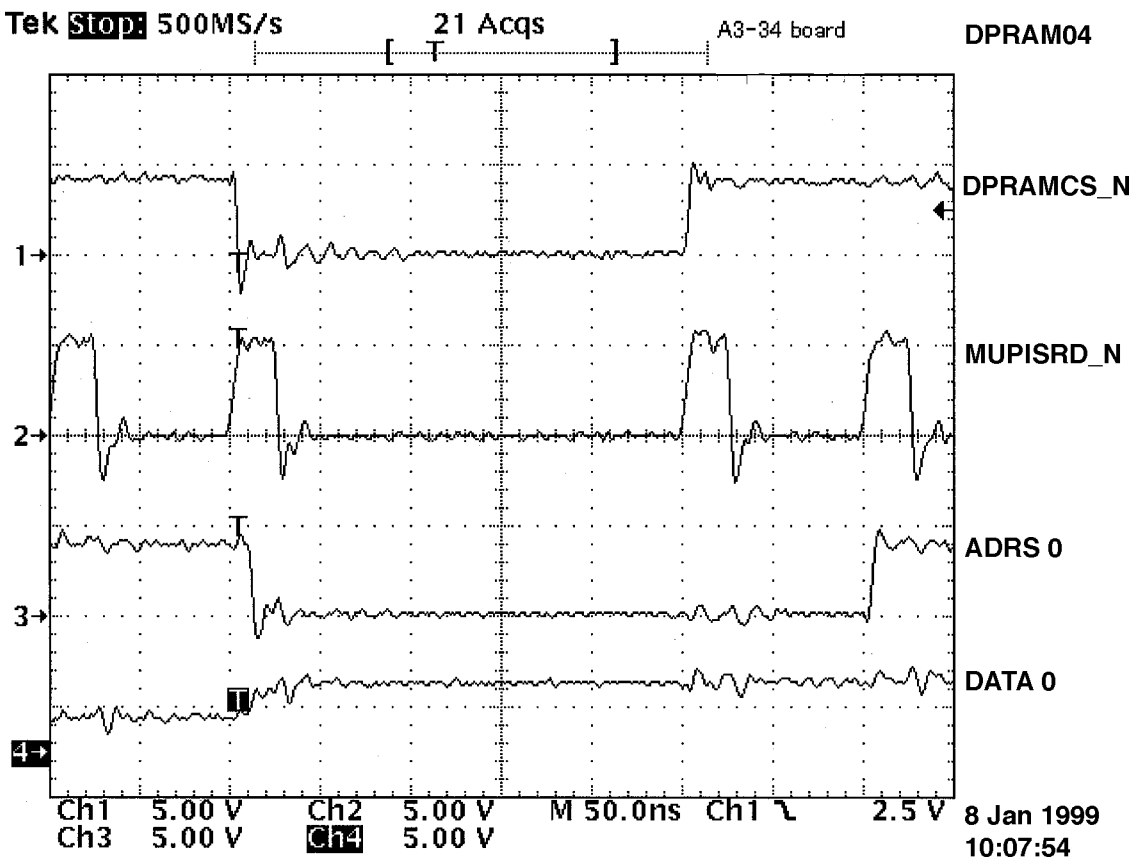


Figure H.10 (3/3)

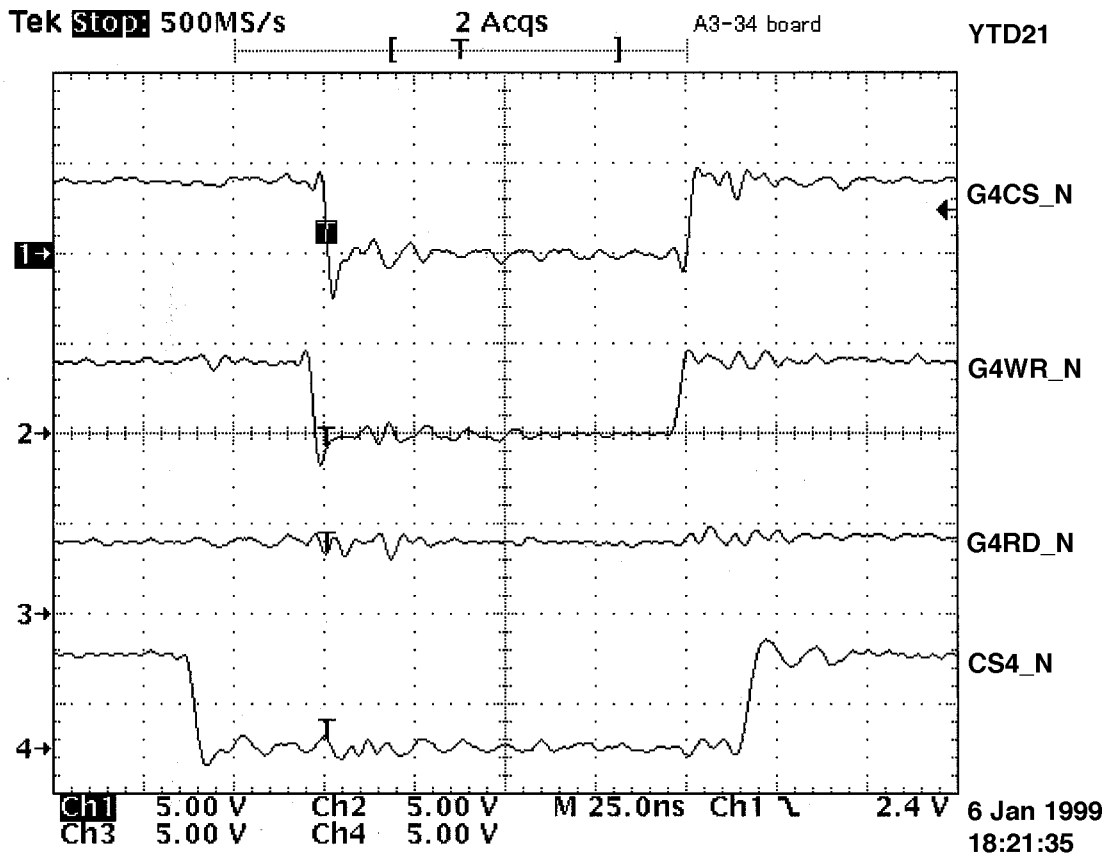


Figure H.11 (1/3)

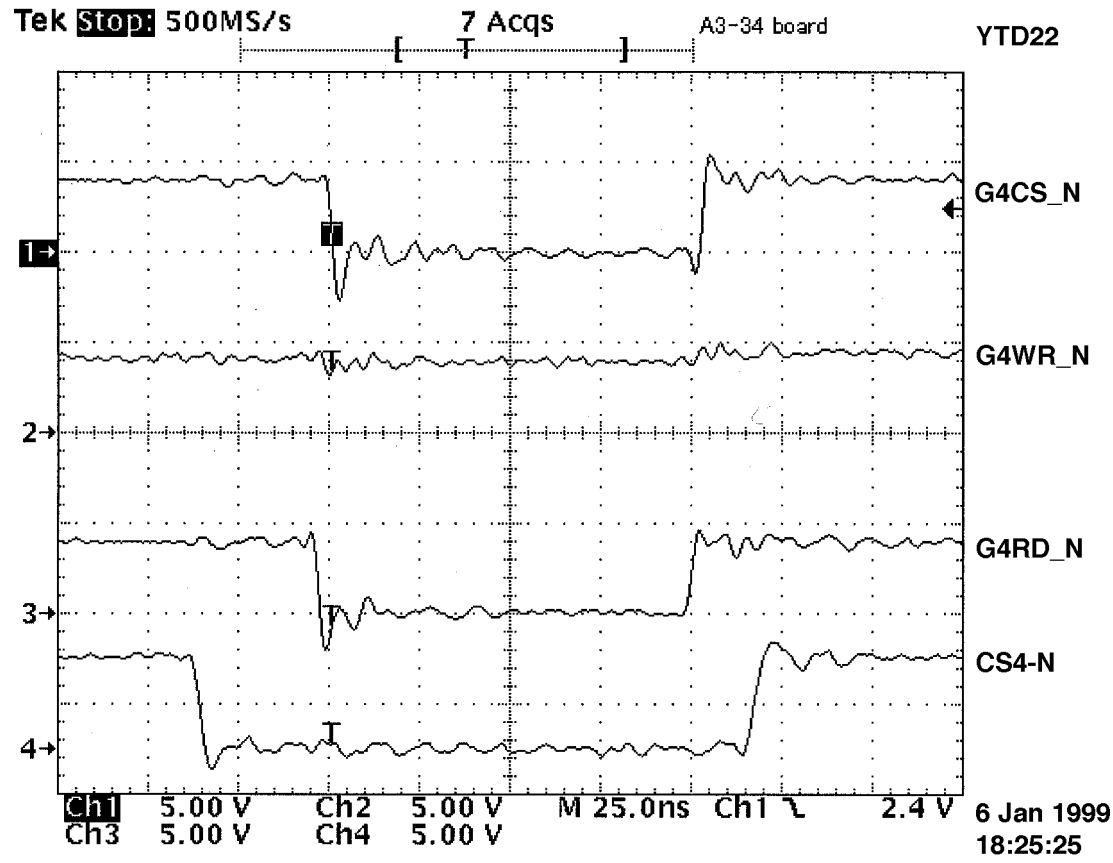


Figure H.11 (2/3)

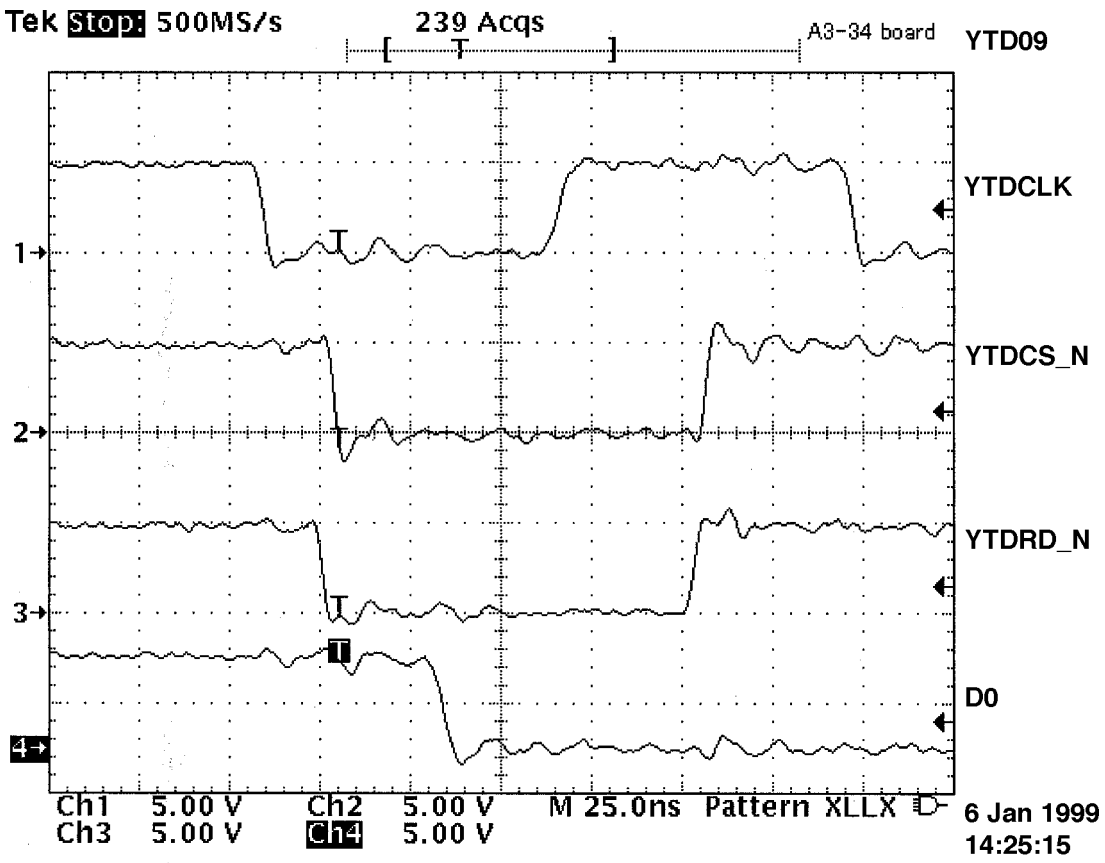


Figure H.11 (3/3)

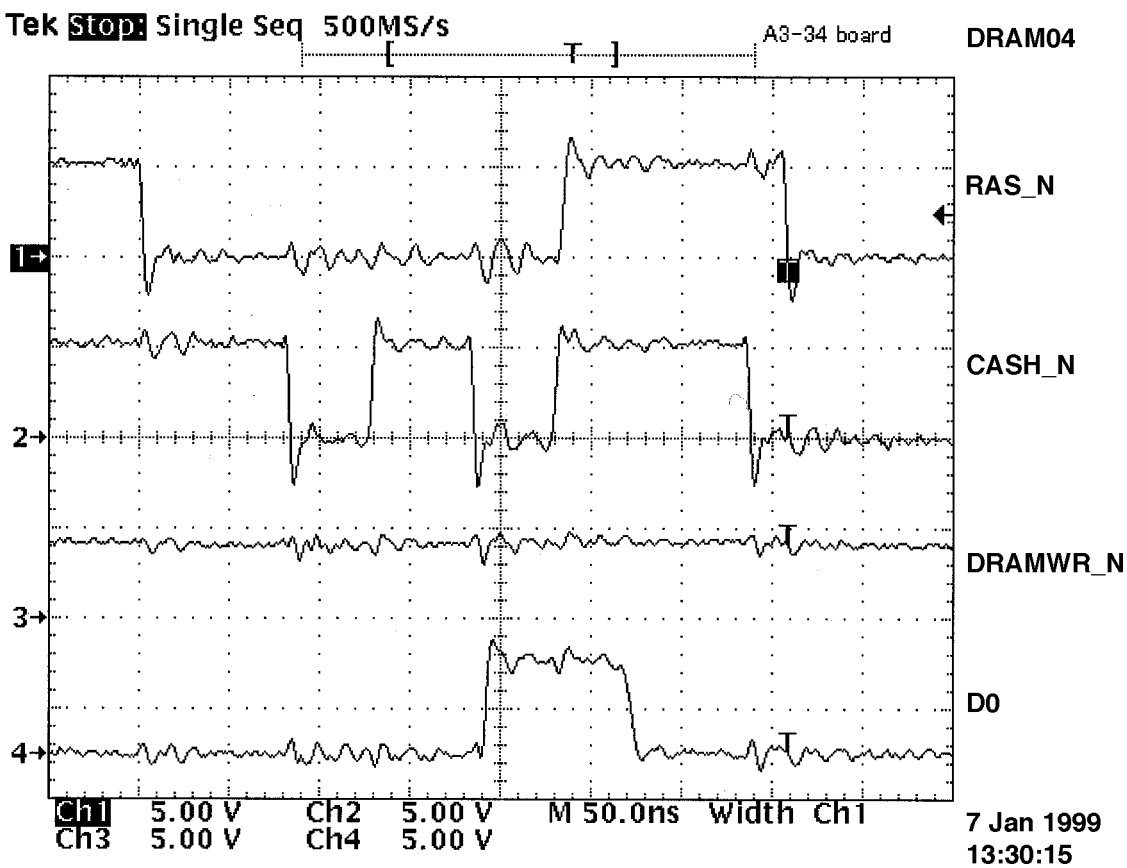


Figure H.12

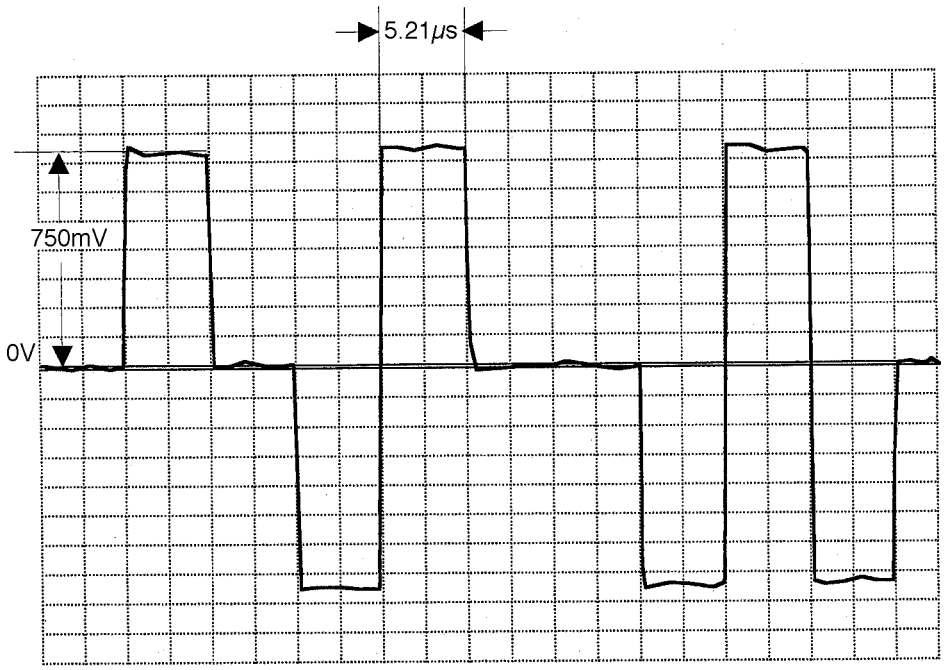


Figure H.13 (1/2)

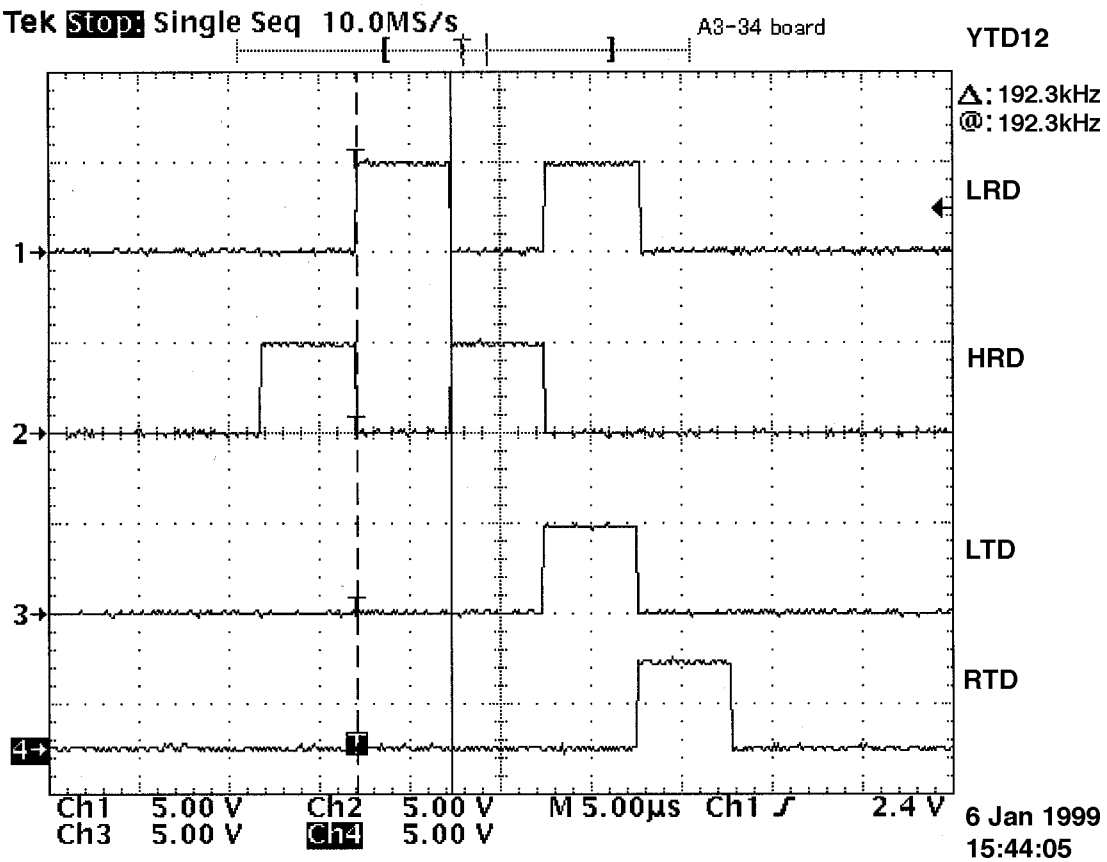


Figure H.13 (2/2)

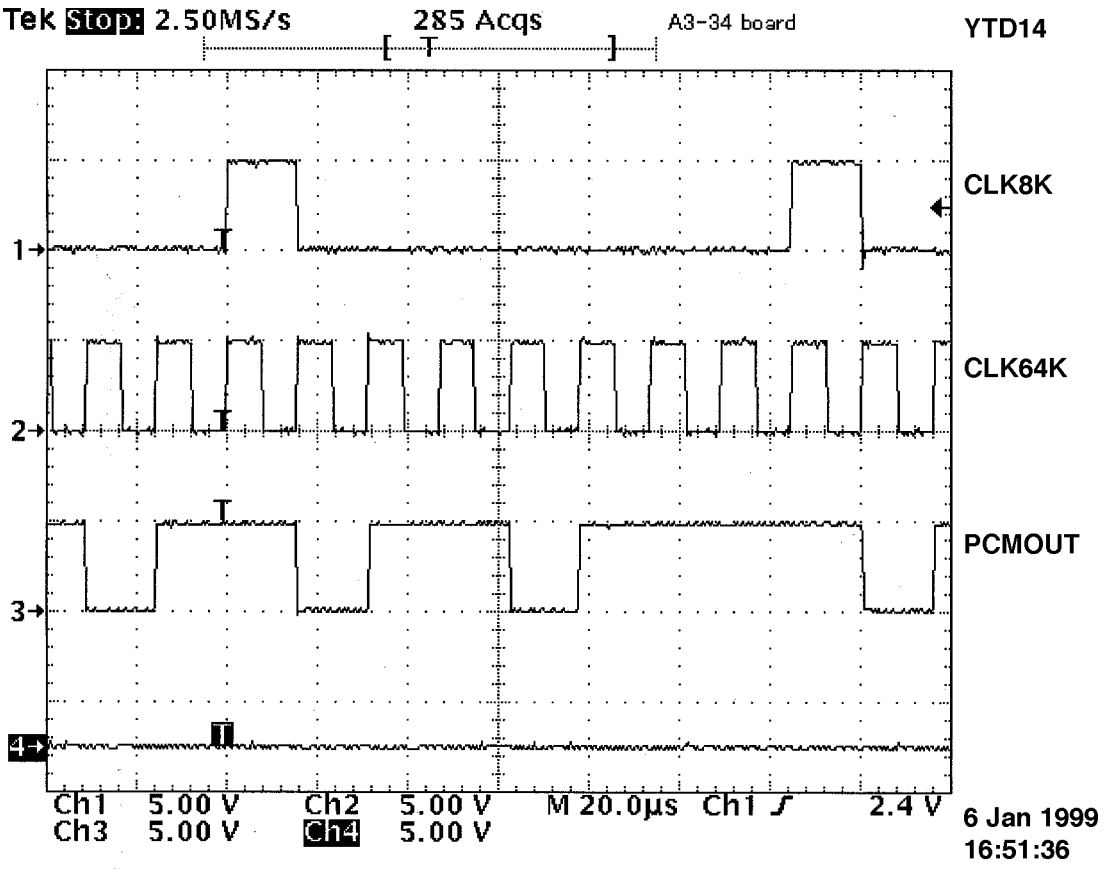


Figure H.14 (1/2)

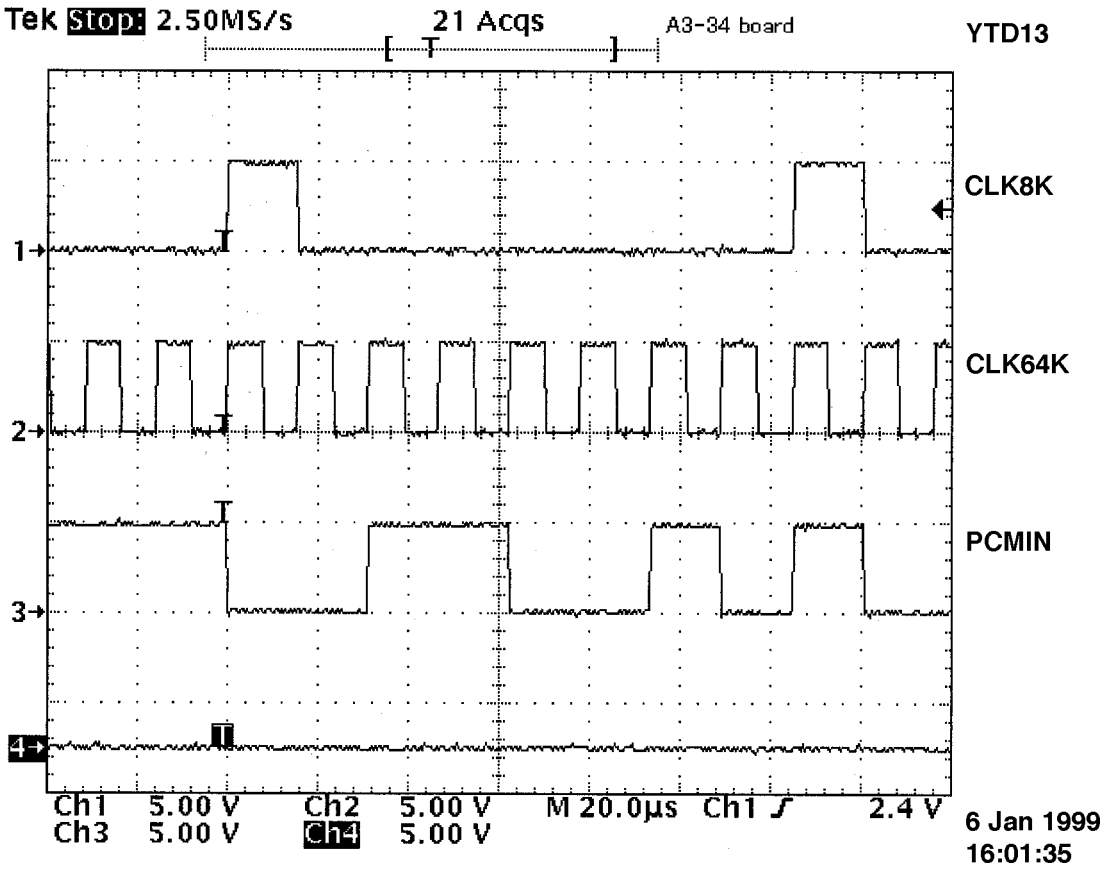


Figure H.14 (2/2)